

# *The* MINING CONGRESS JOURNAL



*Coal in the National Limelight—A Typical Mining Town*

OCTOBER, 1933

# How this Coal Mine Saves \$4,500 Annually

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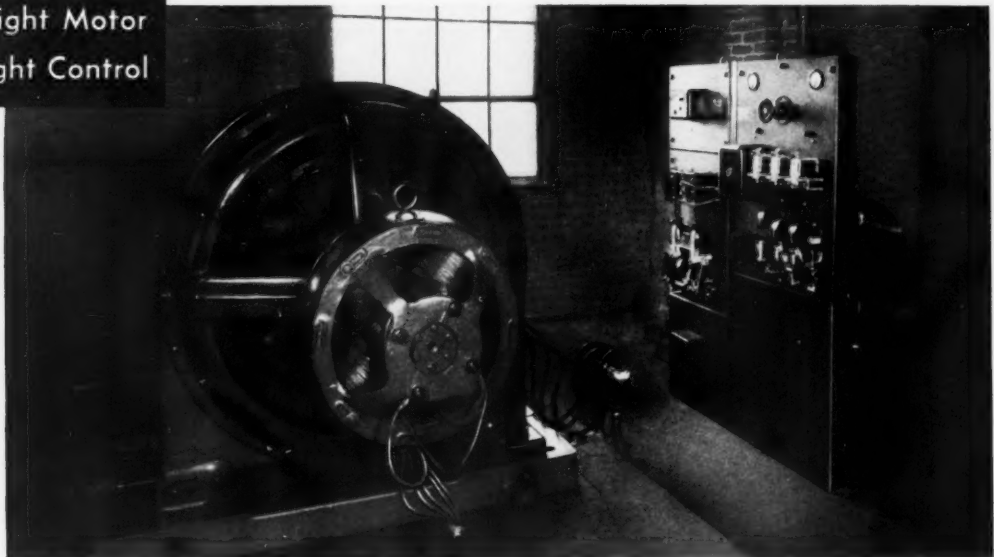
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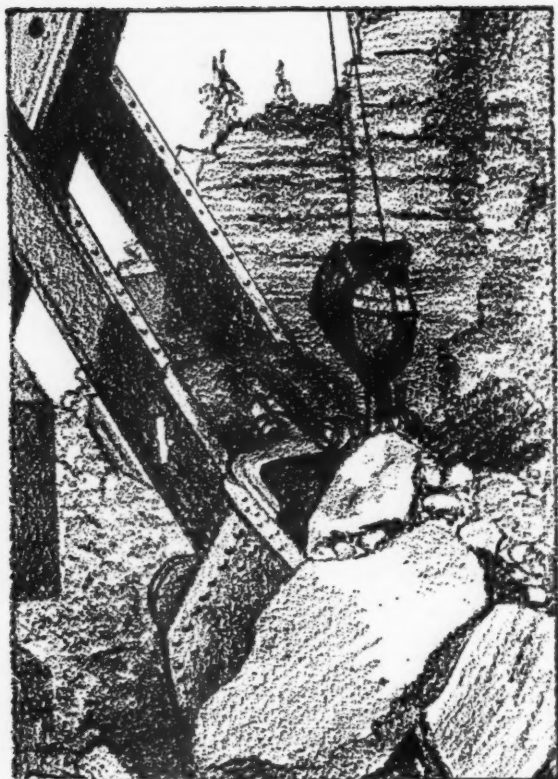
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# A Warning To Organized Labor



**I**T IS but human that organized labor shall take advantage of Section 7(a) of the National Recovery Act. It opens a door to extended influence which in turn opens two doors—one to increased usefulness, and one to increased inefficiency and strife.

Collective bargaining will be accepted by all and welcomed by many employers; but, not collective bargaining as interpreted by organized labor, which means the closed shop in which only labor union members may be employed. This interpretation is wrong in principle. It is a denial of the right of every citizen to sell what he has to sell, without restraint or condition, whether it be his labor or the product of his labor. Membership in any lodge, church or union should not be required as a condition of employment. It should be his right to bargain for himself or to choose another to bargain for him. It should be his right to perform his personal agreement without restraint. This right the closed shop denies.

It is at this point that organized labor forsakes fairness and sows the seed which may lead to its own destruction. The mutual dependence of capital and labor is a fact. Unemployed capital earns nothing. As a rule its employment is impossible without labor. Collective bargaining between them is necessary to the welfare of both. But, for capital to say to labor, "you will work for me on my terms or you won't work for me or anybody else," or, for labor to say to capital, "you will employ me on my terms or you will not be allowed to employ anybody else," is not collective bargaining. It is collective extortion.

The writer believes in organized labor. But, he believes in the open shop as a necessary basis of proper industrial relations. He believes that extortion, collective or otherwise is un-American, a menace to our industrial life, and to our government, and that strife will ensue so long as it is tolerated. He believes that complete control by labor will bring about a revulsion of public sentiment which will either destroy organized labor or create a necessity for its control by government.

Organized labor may well consider conditions in Germany and Italy. It may well consider the stagnation and lack of employment which labor control brought to Great Britain. It must recognize that a bargain, collective or other-

wise, is a meeting of minds, and is not legally enforceable if coercion exerts any influence in reaching the agreement. Minds must come together, must agree. Labor will serve itself best if it contents itself in performing its part in the scheme of industrial production and leaves to capital its right to earn interest, and to management, its function of executive control.

Labor is helpless by itself. The present business depression illustrated most completely its helplessness. Unemployment and its necessary associates, hunger, want and despair, result from disorganization of business enterprise, which is made up of three parts—capital, management, and labor. Each must content itself with its share, if prosperity is to ensue for all. When labor undertakes to control management, inefficiency begins. To the extent that its control increases, waste increases and waste always means want. This want is first felt by labor. When capital's earnings cease it may live on its principal. Directing officials usually strive to create a surplus upon which they may survive. Labor spends its earnings day by day and when wages cease want begins.

Organized labor should so conduct itself as to command the support of a fair-minded public. Every demand which questions the right, either of labor or capital, to control its own affairs without coercion or restraint, which questions the individual's right to complete control of his personal liberty, which makes his opportunity to secure employment conditional, or which limits his right to sell his labor, or the product of his labor, weakens the support of public sentiment.

Labor cannot secure its proper reward without organization. Capital and management must secure appropriate rewards in order to induce the enterprises which make employment possible. The starvation process of coercion by either of these elements does not, cannot, and should not receive public approval.

Justice cannot rest on a foundation of wrong. Justice for all elements of industrial prosperity is the goal to be sought.

Organized labor will succeed or fail in proportion to its recognition and adoption of those fundamental principles which support the right of every individual to "life, liberty and the pursuit of happiness," without condition.

# The MINING CONGRESS JOURNAL

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*A Journal for the entire mining industry published by The American Mining Congress*

## THE CASE OF QUICKSILVER

**Q**UICKSILVER is representative of a group of industries that constitute an aggregate tonnage of importance and represent a large potential employing ability. These industries have been asked to come under the provisions of N. R. A. and practically all of them have submitted codes particularly as to wages and hours of employment.

Section 3(e) of the National Industrial Recovery Act provides a remedy for industries that must be protected by tariff in that it gives the President authority to act quickly in the case of industries threatened by importations and unable to adopt N. R. A. codes unless such importations shall cease.

Quicksilver is an excellent case in point. The industry quickly organized under N. R. A. and submitted a Code of Fair Competition. It asked in the code that special consideration be given its position in regard to protective tariffs. So far no action has been taken, and the life of not only the quicksilver industry but also similar industries hangs in the balance. Importations of quicksilver to date this year amount to 14,346 flasks, while domestic average consumption for 1930-1931 and 1932 was 21,037 flasks. The European Quicksilver Cartel has in stock 180,000 flasks, or sufficient to supply the United States high peak war consumption for five years, or current consumption for nine years, and this can be supplied to the American market for 60 percent of domestic cost under the code.

While the administration dallies and gets all wound up in red tape, we are faced with the possibility of the annihilation of many reliable American industries that employ thousands of men, purchase large amounts of equipment and supplies and otherwise add to our prosperity. Red tape must be cut. Action—immediate action—is essential. These industries should be given quick relief from this unfair situation.

## STIMULUS TO GOLD MINING

**T**HE lifting of the embargo on exportation of newly produced gold is directly in line with the administration policy of creating more jobs and placing more money in the hands of those who will spend it. No part of our population will spend with more freedom than the men of the mines—and here is an additional 50 to 100 millions of dollars a year in wealth, for the taking. The activity in the search for gold at a price of \$32 plus per fine ounce will bring an ever increasing territory into production. Where the climatic conditions are not too severe, prospectors and miners will keep the field through the winter and the ranks of the unemployed will be thereby lessened.

The government is to be commended for this effort to help mining. There is no industry that will so rapidly develop a nation, that will so rapidly bring wealth and contentment to so many people. These mining people in their turn become a fertile market for the products of agriculture and manufacturing and the healthy trade circle is restored. The many men who brought the need for the revival of mining before the President and the Treasury are to be congratulated. Senator King of Utah, Congressman Englebright of California, and other western friends of mining worked tirelessly to show the administration what could be done through permitting the sale of gold on a world market. The country has already felt the stimulus of the good work and it is gratifying to feel that mining bids fair to lead the march to more jobs, more spending, and better days.

## UNMISTAKABLE TRENDS

**I**F ANYONE had any doubt, it certainly has been dispelled by this time as to the course this administration will take in regard to labor.

Back in March a group of industrialists met at Mr. Barney Baruch's home. With them sat Mr. John L. Lewis, United Mine Workers of America. The National Industrial Recovery Act was in the offing and about to be passed. To make it effective, it was necessary for Mr. Roosevelt to have the support of large groups such as power, coal, oil, automobile, etc., and in any agreement he could come to labor must be considered. An agreement was reached. N. I. R. A. became. Then the industrialists maintained that they had not understood the degree of labor's participation in the agreement. But the President had been elected by labor; he had pledged full measure in return; and industry had agreed to go along with those pledges. Most of the big-business group stood by the guns. They were in the mess and would see it through. Others, while not openly opposing the program, did oppose it.

But labor has won. It has industry in the sack. Big business is being made to bow, however ungracefully, to the unions.

Volumes may be written in behalf of both sides. Capital has made mistakes. It has been cruel, selfish, greedy and wicked. But it has also been benevolent, kind, unselfish, and has brought our country to the front ranks of all nations of the world. Power is always abused, and capital today is being punished for the sins of its weakest members.

The record of labor is not a delightful history. It is full of bloodshed, unfairness, selfishness and cruelty. It too, however, under the guiding genius of capital, has taken first rank with the world's labor. Our workmen are highly skilled; they are intelligent and the highest paid group of workers on earth.

Surely the best in both these groups will triumph. If the leaders of both capital and labor are wise, we shall come through this revolution a better and a bigger people.

## COLLECTIVE BARGAINING

**W**HAT is collective bargaining? To union labor it apparently means a "closed shop against all who are not members of a union group." To the average employer it means a closed shop against union labor and an open shop to all who are not members of a union group.

Actually, it means merely the right to get together to agree upon working conditions, hours of work and wages, whether the workers are union or nonunion, and bargain for those things that will make life more tolerable for those bargaining, whether they be employer or worker.

The most controversial question before the N. R. A. has been Section 7(a). The American Federation of Labor has left little doubt as to its interpretation of that section and there is little doubt in the minds of industry who heard the coal code discussions as to just how that section will be administered. Before the advent of the N. R. A. there had been a considerable growth of "employee representation" in industry. There was special effort, after the N. R. A., to develop company unions. It will be interesting to note just how successful these employee representation plans are in the face of the determined effort of the A. F. of L. to bring all workers under unions of a national character.

## THE COAL CODE

**T**HE BITUMINOUS coal code is at last a reality. History will record the negotiations leading up to its acceptance as a truly remarkable achievement. It is the result of months of concentrated effort, marked by constant bickering and bargaining, and as finally presented really meets the approval of no one. In spite of that fact, it represents the very best that might be hoped for, gives a maximum of the things asked by each district, with a minimum of serious handicap.

Bituminous is probably the most highly competitive of the industries coming under N. R. A. Testimony before that body showed that there are approximately 5,000 shipping mines in operation in 26 states, with an invested capital of more than a billion, seven hundred and fifty millions of dollars; that out of this vast number only a dozen companies are actually prosperous; that the industry as a whole is in a bad way. Economically, coal is our most important industry. The misunderstandings and jealousies involved in its production are deep seated and real. For twenty years this industry has been urging "someone" to make the "other fellow" stop, for coal has been sold at less than cost of production in terms of millions of tons.

The industry has been divided into two sections—union and non-union. The Illinois district has been the most outstanding union field. Its position has been unenviable. It has steadily lost tonnage and it has been ground between the rival factions of two competing unions. West Virginia has been the distinctly non-union field and, in spite of its wage advantage and underselling ability, it has failed to make a prosperous coal industry and was in no better shape than its competitors.

By the code adopted all mines will be largely under the wing of the United Mine Workers of America. John L. Lewis had the men signed on the dotted line in many districts that have long been non-union. Virtually the old Central Competitive Field is reestablished, and there will be a more equitable market situation.

The battle has been real. It has taken a Presidential Order and a union threat of a nationwide strike to bring the districts together. The opportunity presents itself for a united front and the bringing of this great industry to first line prosperity. Certainly the operators are attempting to do this. If the Mine Workers are alive to their possibilities and the operators to the opportunity presented to them, we shall see very shortly a prosperous coal industry.

## COMPANY SCRIP

**T**HE proposed Code of Fair Competition for the retail trade contains in Article IX, Section 3, the following provision:

"Company Scrip: No retailer shall accept as payment for merchandise any non-negotiable scrip, company checks or other evidence of wage payment issued by any individual or private non-charitable organization in payment of wages or as an advance upon unearned wages."

It is understood that this proviso was inserted in the proposed code as an eleventh hour effort on the part of a group of retail merchants in the South to force negotiable cash advance orders on the employees of mining companies. The cash advance is a practice which has ever made for improvidence among our people and when experienced by and made known to the young in the homes of industrial workers simply trains the oncoming generation in the improvident habits which have so adversely affected the welfare of our people. If it is at all possible a worker will and should wait for the regular bi-monthly pay days to receive his pay in cash. It is wrong for retail merchants to seek the development of the practice of drawing cash from day to day merely to satisfy their rapacity for trade to the demoralization of the workers.

The issuance of trade coupons or scrip and the check-off of accounts in the stores of mining enterprises are a neces-

sity in caring for new employees in staking them to tools, clothing and food before they start work and until they can draw a pay. The retail merchants who hang on the flanks of every employing activity give little thought to the well-being of the workers from whom they draw their livelihood and so are seeking through their code of competition (be it "fair" or otherwise) to complicate the problem.

## CONSTRUCTIVE LEGISLATION OF 1933

**W**E ARE scarcely aware of it but we are in the midst of a startling experiment. The most remarkable and potentially important social legislation ever enacted by the legislature of a nation was passed by the 73rd Congress and is now in process of unwinding itself for the benefit (or annihilation) of a people. This legislation represents a great experiment in federal control or regulation of all natural resources and goes even farther in attempting to correlate financial and distribution problems of those industries which involve our whole credit structure. These laws deal with agriculture, coal, metals, railroads, banking, and currency, and in addition strive to control price levels, reduce unemployment, rebuild purchasing power, and restore confidence in a badly demoralized world.

Most of us were more or less prepared for the campaign for higher wages and shorter hours. Few of us were prepared to accept political dictation along industrial lines. But we are confronted with a fact, not a theory. Government means to sit at the head table and will accept little less than the seat of honor; it means to control working hours and wages, production and distribution, profits and taxes.

Amazing, isn't it? Only yesterday we were decrying the unmistakable trend of government in business; today we find government in business not only on our doorstep but cozily inside the establishment in our favorite seat of authority.

## THE BACK-TO-THE-HAND MOVEMENT

**T**HERE HAS BEEN a great deal written and said against the increasing use of machines in industry. In the early days of machine operation, when no one could foretell the benefits which would be gained by the people as a whole, it was not surprising that there should have been criticism from those who could only see that some men were being thrown out of work. All this, however, has been several generations ago and it is rather surprising today, when our standard of living has been raised by machinery to a point never before equalled in the world's history, that there should be a "back-to-the-hand" movement advocated by people who really should know better.

There is a curious mental attitude on the part of those who oppose industrial mechanization and they do not seem to realize that they nullify their own arguments when their attacks against machines are written on typewriters, printed by linotype machines, and distributed through our mechanized transportation systems. A man who advocates increasing hours of employment by abandoning the steam shovel in favor of the wheelbarrow apparently sees nothing improper in driving a car himself and decreasing employment by trying to get more miles per tire or per gallon. If the critics of machines will themselves give up labor-saving devices such as automobiles, telephones, steam heat, etc., their arguments might be more convincing, but if they were to do that and could persuade the rest of us to follow their lead, the very act of giving these things up would cause more unemployment than could be replaced by hand labor. So certainly that is not the answer.

A much better plan is to bend our efforts toward providing these comforts and luxuries for those who do not now have them. Until this point is reached there is no over-production. As long as people suffer from cold in winter, there is no over-production of coal; as long as people go ragged and barefooted, there is no over-production of clothing; as long as people go hungry, there is no over-production of food; and as long as any industry still has manual jobs which require such hard, muscular work as to bring physical old age to a man by the time he is 40 years old, there is no over-development of machines.



# MINING EVENTS

## Bituminous

**B**ITUMINOUS COAL was a topic of major importance during the month, with the continuation of efforts to agree upon a code of fair competition under NIRA. On September 18 the industry signed the code, thus bringing together a very large percentage of coal production.

On September 12, after repeated efforts to secure an agreement among the so-called 70 percent non-union fields, and failing, General Hugh S. Johnson called a general meeting to consider a code which had been submitted to the industry by President Roosevelt, September 7. The meeting was attended by a very large number of operators, representing each coal producing district, who came with definite determination to protest the imposed code. Donald Richberg, general counsel for NRA, addressed the meeting, and said that there was a misunderstanding as to the purpose of the administration in submitting the code; that there was no thought of imposing a code; but that it had been presented to the industry in a real effort to get somewhere and was offered for criticism. He pointed out that since the submission of the code the NRA had been submerged with protest and criticism of its provisions. In fact the greater part of the industry refused to submit criticisms, because they objected to all of the code's provisions. The result of the meeting was the appointment of a committee, supposedly of 18 members, to confer with the administration officials, in the immediate development of a code that would be acceptable. The committee was appointed, and went to work with a will, but in spite of its earnestness it took a dead-line order from President Roosevelt for a code "within 24 hours," and a threat from the United Mine Workers, of an industry-wide strike, to bring about agreement. The operators definitely signed under protest, and with a feeling of futility. Even with all that pressure, two districts have failed so far to agree to the code. Alabama and western Kentucky are outside the fold, but NRA has stated that they would not permit any minority to hinder the operation of the code. It is anticipated that an agreement will be reached with the outside districts before the date of October 2, when the code becomes effective.

With the signing of the code, operators from the non-union fields immediately began negotiations with the United Mine Workers of America for wage agreements, and on September 21 this group reached an agreement. There now remains the setting up of the administration machinery, the organizations looking to dealing with the union, and the details of district administration.

At the present time (September 25) a special survey is being made by the Government of the supply of bituminous coal, which shows some six or seven million tons above ground, which is estimated to be about a month's supply. President Roosevelt is discussing with his advisors the possibility of purchasing coal for the destitute this winter. If such a plan is approved, funds will be provided by the Federal Emergency Relief Administration.

Bituminous production increased approximately 12.8 percent during the first eight months of 1933. Total production during that period was 208,544,000 tons, an increase of more than twenty-three and a half million tons.

The code as signed is as follows:

### ARTICLE I

#### Purposes

To effectuate the policies of Title I of the National Industrial Recovery Act, the following provisions are submitted as a Code of Fair Competition for the bituminous coal industry and upon approval by the President shall be the standards of fair competition for this industry.

### ARTICLE II

#### Definitions

As used in this Code the term "Industry" as applied to the Bituminous Coal Industry means the production and original sale of all kinds of coal (except anthracite), lignite, and the production and original sale of coke other than by-product coke.

The term "employer" includes any person employing labor in any phase of the industry.

The term "employee" includes all persons employed in the industry.

The term "Administrator" means the official designated by the President to administer the National Industrial Recovery Act.

### ARTICLE III

#### Maximum Hours of Labor

No employee, except members of the executive, supervisory, technical and confidential personnel, shall be employed in excess of 40 hours in any calendar week after the effective date of this Code. No employee shall be required or permitted to work more than eight hours in any one day at the usual working places or otherwise in or about the mine (exclusive of lunch period), whether paid by the hour or on a tonnage or other piece-work basis.

There shall be excepted from the foregoing limitations (a) employees required because of accidents which temporarily necessitate longer hours for them; (b) supervisors, clerks, technicians and that small number of employees at each mine whose daily work includes the handling of man trips and/or haulage animals and coal in transit and those who are required to remain on duty while men are entering and leaving the mine.

The foregoing maximum hours of work shall not be construed as a minimum; and if at any mine a majority of the employed workers express their desire, by written request to the employer, to share available work with bona fide unemployed workers of the same mine, the number of hours work may be adjusted accordingly by mutual agreement between such employed workers and their employers.

### ARTICLE IV

#### Minimum Rates of Pay

The basic minimum rate for inside skilled labor and the basic minimum rate for outside common labor shall be the rate hereinafter set forth in Schedule "A" for each district therein described for each such classification of labor, with the understanding that other classifications of employment will maintain their customary differentials above or below said basic minimum rates and that payments for work performed on a tonnage or other piece-work basis will maintain their customary relationship to the payments on a time basis provided in said basic minimum rates.

### ARTICLE V

#### Conditions of Employment

(a) Employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) employers shall comply with the maximum hours of labor, minimum rates of pay and other conditions of employment, approved or prescribed by the President.

(b) Except as otherwise hereinafter provided, all coal mined on a tonnage basis shall be weighed and the miner paid on the basis of 2,000 or 2,240 pound ton. The miners shall have the right to a checkweighman, of their own choosing, to inspect the weighing of coal; *Provided*, that where mines are not now equipped to weigh coal a reasonable time may be allowed to so equip such mines; and provided, that in any case where rates of pay are based on any other method than on actual weights, the miners shall have the right to check the accuracy and fairness of the application of such methods, by representatives of their own choosing.

(c) The net amount of wages due shall be paid semi-monthly in lawful money or pay-check at the option of operators. Any deductions from employees' pay, if not a matter of agreement, shall be in conformity with such general rules and regulations as the Administrator may prescribe for the purpose of preventing unfair deductions, or those which may in effect lower the rates of pay herein provided.

(d) Employees other than maintenance or supervisory men or those necessary to protect the property, shall not be required as a condition of employment to live in homes rented from the employer.

(e) No employee shall be required as a condition of employment to trade at the store of the employer.

(f) No person under seventeen (17) years of age shall be employed inside any mine or in hazardous occupations outside any mine, provided, however, that where a state law provides a higher minimum age, the state law shall govern; no person under the age of sixteen (16) shall be employed in or about a mine.

(g) As soon as possible after the adoption of this Code, the National Recovery Administration shall undertake, through a designated committee or agency, an investigation for the purpose of reporting on or before December 31, 1933; upon (a) the practicability and cost (assuming the maintenance of existing rates of pay) of applying to bituminous coal mining a shorter work day and work week, (b) the effect of an advisability of revising wage differentials in the various divisions and districts of the industry and in the event of recommended change specification of the amount thereof; (c) the sales obtained for coal, or reasonably to be anticipated, up to the time of the report, for the purpose of determining whether wages and employment can be further increased or maintained without imposing undue burdens upon the industry.

On January 5, 1934, there shall be held a conference between representatives of employers and employees operating under this Code, together with representatives of the National Recovery Administration, for the purpose of determining what, if any, revisions may be desirable at that time of the wages, hours and differentials, or any other requirements of this Code, on the basis of conditions then existing and the report of representatives of the National Recovery Administration made as hereinbefore provided.

Unless revised by mutual agreement, as the result of said conference beginning January 5, 1934, the hours of work, minimum rates of pay and wage differentials as set forth in this Code shall continue in effect until April 1, 1934.

### ARTICLE VI

#### Unfair Practices

SECTION 1. The selling of coal under a fair market price (necessary to carry out the purposes of the National Industrial Recovery Act, to pay the minimum rates herein established, and to furnish employment for labor) is hereby declared to be an unfair competitive practice and in violation of this Code. In order to determine the fair mar-



ket price, agencies shall be established, as hereinafter provided, and sales of coal at any time at a price less than a fair market price determined and published, as hereinafter provided, shall create against any person selling at a lower price a prima facie presumption that such a person is engaged in destructive price cutting and unfair competition. It shall be proper in determining such fair market price to take into consideration, in addition to the matters above set forth, also competition with other coals, fuels and forms of energy or heat production.

SEC. 2. The fair market prices of coal of any grade and character referred to in the next preceding section, subject to the power of review hereinafter stated, shall be

(a) The minimum prices for the various grades and sizes in the various consuming market which may be established for future application by a marketing agency or by marketing agencies, of whatever form or howsoever constituted, now existing or hereafter created or organized, acting for coal producers truly representative of at least two-thirds of the commercial tonnage of any coal district or group of districts, such minimum prices to be effective when and as announced as provided in Section 4 hereof.

(b) The minimum prices for the various grades and sizes in the various consuming markets, where no such marketing agency exists, which may be established for future application by the respective Code Authorities hereinafter set up, for their respective areas, after having given consideration to the various conditions and circumstances entering into the sale of each grade and class of commercial coal produced in the district or group of districts it represents, such minimum prices to be effective when announced as provided in Section 4 hereof.

(c) As a basis for determining the fair market price to be announced and published, as provided in the two preceding clauses, the Code Authorities shall utilize the Classifications of coals made by such agencies as are referred to in clause (a) of this section, and shall classify the coals in said districts not sold by such agencies and also the coals in the districts referred to in clause (b) of this section, to which the various prices apply. Said Code Authorities shall, at all times, provide and keep open an office during business hours to which any coal producer in said districts and any representative of the Administrator may apply for information with respect to said classifications and prices.

(d) The term "marketing agency" or "agency" as used in this Article shall include any trade association of coal producers complying with the requirements of a marketing agency and exercising the functions thereof.

SEC. 3. The fair market prices established for future application under the provisions of Section 2(a) shall be reported to said Code Authorities by any such marketing agencies in such manner as may be required by such Authorities.

SEC. 4. The fair market prices of bituminous coal, established as aforesaid by such agencies and Code Authorities shall be published within fifteen days after the effective date of this Code, after approval by the Presidential Member of the Code Authority (acting under the direction of the Administrator), who in his approval may permit a reduction or increase in said prices by action of said agencies or Authorities within the limits which he may prescribe, and thereafter shall be published whenever any change is made therein, and not less frequently than one each month, and on the first of the month. Simultaneously with such publication, said fair market prices of bituminous coal shall be transmitted by the Code Authorities to the National Recovery Administrator for his further review and subsequent action.

SEC. 5. Both the records and the data of such marketing agencies, and of said Code Authorities, shall be open to inspection and investigation by any agent of the Administrator whom he shall appoint for that purpose. Should such an agent of the Ad-

ministrator disapprove of any changes proposed in any fair market prices from those previously approved by the Administrator as being in excess of any reductions or increases allowed in such approval, such changes shall not be made effective unless and until the Administrator shall approve them.

SEC. 6. The consignment of unordered coal, or the forwarding of coal which has not actually been sold, consigned to the producer or his agent, is a violation of this Code; provided, however, that coal which has not actually been sold may be forwarded, consigned to the producer or his agent at rail or truck yards, tidewater ports, river ports or lake ports and/or docks beyond such ports, but such consignments shall be limited to cover:

(a) Bunker coal;

(b) Coal applicable against existing contracts;

(c) Coal for storage (other than in railroad cars) by the producer or his agent in rail or truck yards or on docks, wharves or other yards for resale by the producer or his agent.

SEC. 7. The adjustment of claims with purchasers of coal in such manner as to grant secret allowances, secret rebates or secret concessions creates price discrimination and is a violation of this Code.

SEC. 8. The prepayment of freight charges with intent or with the effect of granting a discriminatory credit allowance is a violation of this Code.

SEC. 9. The giving in any form of adjustments, allowances, discounts, credits, or refunds to purchasers or sellers of coal, for the purpose or with the effect of altering retroactively a price previously agreed upon in such manner as to create price discrimination is a violation of this Code.

SEC. 10. The pre-dating or the post-dating of any invoice or contract for the purchase or sale of coal, except to conform to a bona fide agreement for the purchase or sale entered into on the pre-date, is a violation of this Code.

SEC. 11. Terms of sale shall be strictly adhered to; and the payment or allowance of rebates, refunds, credits, or unearned discounts, whether in the form of money or otherwise, or extending to certain purchasers services or privileges not extended to all purchasers under like terms and conditions, is a violation of this Code.

SEC. 12. An attempt to purchase business, or obtain information concerning a competitor's business by gifts or bribes, is a violation of this Code.

SEC. 13. The intentional misrepresentation of analysis and/or sizes or the intentional making, causing or permitting to be made, or publishing, of any false, untrue, misleading or deceptive statement, by way of advertising, invoice, or otherwise, concerning the size, quality, character, nature, preparation or origin of any coal, bought or sold, is a violation of this Code.

SEC. 14. The unauthorized use, either in written or oral form, of trademarks, trade names, slogans, or advertising matter already adopted by a competitor, or deceptive approximation thereof, is a violation of this Code.

SEC. 15. Inducing or attempting to induce, by any means or device whatsoever, a breach of contract between a competitor and his customer during the term of such contract, is a violation of this Code.

SEC. 16. Nothing in the foregoing sections of this Article shall prevent any American producer from creating special prices for overseas exports.

SEC. 17. The splitting or dividing of commissions, brokers' fees, or brokerage discounts, or otherwise in any manner through sham or indirectness the use of brokerage commission or jobbers arrangements or sales agency for making discounts, allowances, or rebates, or prices other than those determined as provided in this Code, to any industrial consumer or to any retailer, or to others, shall be a violation of this Code.

SEC. 18. To sell to, or through, any broker, jobber, commission account, or sales agency, which is in fact an agent for an organization of retailers or industrial consumers, whereby they secure indirectly a

discount, dividend, allowance, or rebates, or a price other than that determined as provided in this Code, shall be a violation of this Code.

## ARTICLE VII

### Administration

SECTION 1. For the purposes of Administration of this Code, the Bituminous Coal Industry is hereby divided into five divisions as follows:

Division No. I.—Pennsylvania, Ohio, Lower Peninsula of Michigan, Maryland, West Virginia, Kentucky, Northern Tennessee (including all counties not included within Division No. III), Virginia, and North Carolina.

Division No. II.—Iowa, Indiana, and Illinois.

Division No. III.—Alabama, Southern Tennessee (including Marion, Grundy, Sequatchie, White, Hamilton, Bledsoe, and Rhea Counties), and Georgia.

Division No. IV.—Missouri, Kansas, Arkansas, Oklahoma, and Texas.

Division No. V.—New Mexico, Colorado, Utah, Wyoming, North Dakota, South Dakota, Montana, Idaho, Washington, Oregon, California, Nevada, and Arizona.

In each of the foregoing five divisions, sub-divisions may be established, as hereinafter provided.

### Divisional Code Authorities

SEC. 2. For each of the foregoing divisions there shall be established within ten days after the effective date hereof, or within such further time as may be permitted by the Administrator, a Divisional Code Authority, or Sub-Divisional Code Authorities for the administration of this Code within such division, either for the division as a unit, or for sub-divisions thereof, respectively, as may be determined. All the members of a Code Authority, except one (without vote and to be appointed by the President) shall be selected by an association or associations, or a committee of coal producers within the division or sub-division which shall be truly representative of the industry therein and impose no inequitable restrictions on admission to membership. A full report of any such action taken to establish a Code Authority shall be made to the Administrator and shall become effective upon approval by him. A sub-division shall consist of a geographical area within which all coal producers shall be entitled to membership in the association or committee establishing the Code Authority. The Administrator shall have power to limit the number of subdivisions within a division and to determine any controversy arising in the establishment of such a Code Authority, and his decision shall be conclusive as to compliance with the requirements of this Section and of the National Industrial Recovery Act in the initial establishment of such a Code Authority.

In the event that Sub-Divisional Code Authorities are established within a division, such Sub-Divisional Code Authorities shall establish a Divisional Code Authority to exercise the functions hereinafter provided for a Divisional Code Authority and any other functions which may be conferred upon the Divisional Code Authority by the Sub-Divisional Code Authorities, all in conformity with any rules and regulations prescribed by the Administrator. One member of a Divisional Code Authority, without vote, shall be appointed by the President.

A Code Authority shall administer this Code in its Division or Sub-Division and shall have the duties and exercise the powers which are conferred upon it in this Article and in Article VI of this Code, and shall have authority to adopt appropriate by-laws, rules and regulations for the exercise of its functions.

Marketing agencies or trade associations may be established or maintained within any division or sub-division by a voluntary association of producers within any producing district therein, as such district may be defined by the Code Authority and function under such general rules and regulations as may be prescribed by the Code

Authority, with the approval of the Administrator, for the purpose of preventing any unfair practices, as defined in Article VI of this Code.

SEC. 3. Each Code Authority shall collect and compile any reports and other information required under the National Industrial Recovery Act; and in investigations of any complaint of unfair practices the Presidential member of a Code Authority shall have power to require reports from, and shall be given access to inspect the books and records of producers within the jurisdiction of such Code Authority to the extent he may deem necessary for the determination of the validity of the complaint. All coal producers subject to the Code shall furnish to any government agency or agencies designated by the Administrator, such statistical information as the Administrator may, from time to time, deem necessary for the purposes recited in Section 3(a) of the National Industrial Recovery Act; and any reports and other information collected and compiled by a Code Authority, as heretofore provided, shall be transmitted to such government agencies as the Administrator may direct.

The expense of administering this Code by a Divisional (or Sub-Divisional) Code Authority shall be borne by those subject to such Code Authority, each paying his proportionate share, as assessed, computed on a tonnage basis, in accordance with regulations prescribed by the Code Authority with the approval of the Administrator.

#### Industrial Board

SEC. 4. There shall be established within ten days after the creation of the Divisional Code Authorities a National Bituminous Coal Industrial Board, consisting of four members designated by the Divisional Code Authority of Division No. I, two members designated by the Divisional Code Authority of Division No. II, one member each designated by the Divisional Code Authorities of Divisions No. III, IV, and V and the five members of the Divisional Code Authorities who have been appointed by the President. The President may appoint not more than three members of the Industrial Board in addition to, or in substitution for one or more of, the aforesaid five members of the Divisional Code Authorities. This Board shall have the duties and exercise the powers conferred upon it in this Code, or any revisions thereof and particularly shall meet from time to time at the call of the Administrator, who shall be ex officio chairman thereof, to consider and to make recommendations to the Divisional Code Authorities and to the President as to any amendments of this Code, or other measures which may stabilize and improve the conditions of the industry and promote the public interest therein.

#### Labor Relations

SEC. 5. (a) Any controversy concerning hours, wages, and conditions of employment, or compliance with the provisions of Article V of this Code, between employers and employees who are organized or associated for collective action shall, if possible, be adjusted by conference and negotiation between duly designated representatives of employers and such employees, meeting either in a mine conference or district conference or divisional conference, as the machinery for such conference may be established by agreement of the parties thereto; and it shall be the duty of employers and employees to exert every reasonable effort to establish such a machinery of adjustment and to utilize it to negotiate to a conclusion such controversies wherever possible.

(b) Any such controversy which cannot be settled in the manner so provided and which threatens to interrupt or has interrupted, or is impairing, the efficient operation of any mine or mines to such an extent as to restrain interstate commerce in the products thereof, shall be referred to the appropriate Bituminous Coal Labor Board, established as hereinafter provided, and the decision of said Board shall be accepted by the parties to the controversy as effective for a provisional period of not longer than six months, to be fixed by the Board.

(c) During the consideration of any such controversy either by the agreed machinery of adjustment, or by the Bituminous Coal Labor Board, neither party to the controversy shall change the conditions out of which the controversy arose, or utilize any coercive or retaliatory measures to compel the other party to accede to its demands.

(d) If any such controversy shall involve or depend upon the determination of who are the representatives of the employees chosen as provided in Section 7(a) of the National Industrial Recovery Act, the appropriate Bituminous Coal Labor Board, through any agent or agency it may select, shall have the power to determine the questions by an investigation and, if necessary, by a secret ballot taken under its direction.

(e) A Bituminous Coal Labor Board shall be appointed by the President for each Division, except there shall be two Boards for Division No. I, to exercise the powers herein conferred upon it, which shall consist of three members, one to be selected from nominations submitted by organizations of employees within such division, one to be selected from nominations by the Divisional Code Authority and one who shall be a wholly impartial and disinterested representative of the President. The expenses of such board shall be met by equal contributions from the employers and employees nominating members, the amount and method of collecting which shall be determined by regulations prescribed by the President.

(f) There shall be a National Bituminous Coal Labor Board composed of the members of the six divisional labor boards which may be convened upon call of the Administrator in the event that—

1. A controversy involves employers and employees of more than one division, or

2. The decision of a divisional labor board affects operating conditions of more than one division either directly or because of its effect upon competitive marketing, or

3. In the opinion of the Administrator the decision of a divisional labor board involves the application of a policy affecting the general public, or the welfare of the industry as a whole.

The National Bituminous Coal Labor Board may exercise all the powers conferred upon a divisional labor board, either in giving original consideration to a controversy, or in reviewing the decision of a divisional labor board, which may be either affirmed, set aside and/or modified.

#### ARTICLE VIII

##### Safety

Employers and employees shall cooperate in maintaining safe conditions of operation in compliance with the applicable requirements of State laws or regulations in conformity therewith.

#### ARTICLE IX

##### Amendments

Any Code Authority may propose amendments to this Code from time to time effective generally or as to the area within its jurisdiction which, after submission to any other Code Authority affected thereby (which shall include the divisional Code Authority in case of an amendment proposed by a sub-divisional Code Authority), may be recommended by the Administrator for the approval of the President.

#### ARTICLE X

This Code and all the provisions thereof are expressly made subject to the right of the President, in accordance with the provision of sub-section (b) of Section 10 of the National Industrial Recovery Act, from time to time to cancel or modify any order, approval, license, rule or regulation issued under Title I of said Act and specifically, but without limitations, to the right of the President to cancel or modify his approval of this Code or any conditions imposed by him upon his approval thereof.

#### ARTICLE XI

##### Effective Date and Termination

This Code shall become effective on the second Monday following its approval by the President, and shall continue in effect

until April 1, 1934, and thereafter in the absence of the exercise of the power reserved to the President in Article X, subject to the exercise of the option, after 30 days' notice to the Administrator, by any coal producer to withdraw his consent after April 1, 1934, to the further enforcement of the Code as a Code to which he has voluntarily given his consent.

#### Executive Order

##### Code of Fair Competition for the Bituminous Coal Industry

An application having been duly made, pursuant to and in full compliance with the provisions of Title I of the National Industrial Recovery Act, approved June 16, 1933, for my approval of a Code of Fair Competition for the Bituminous Coal Industry, and hearings have been held thereon and the Administrator having rendered his report containing an analysis of the said Code of Fair Competition together with his recommendations and findings with respect thereto, and the Administrator having found that the said Code of Fair Competition complies in all respects with the pertinent provisions of Title I of said Act and that the requirements of clauses (1) and (2) of sub-section (a) of Section 3 of the said Act have been met:

Now, THEREFORE, I, Franklin D. Roosevelt, President of the United States, pursuant to the authority vested in me by Title I of the National Industrial Recovery Act, approved June 16, 1933, and otherwise, do adopt and approve the report, recommendations, and findings of the Administrator and do order that the said Code of Fair Competition be and is hereby approved, subject to the following conditions:

(1) There shall be added to the first paragraph of Section 3 of Article VII of the Code the following sentence:

"All coal producers subject to the Code shall furnish to any government agency or agencies designated by the Administrator, such statistical information as the Administrator may, from time to time, deem necessary for the purposes recited in Section 3(a) of the National Industrial Recovery Act and any reports and other information collected and compiled by a Code Authority, as heretofore provided, shall be transmitted to such government agencies as the Administrator may direct."

(2) There shall be added after the first sentence of Section 4 of Article VII the following sentence:

"The President may appoint not more than three members of the Industrial Board in addition to, or in substitution for one or more of, the aforesaid six members of the Divisional Code Authorities."

(3) Schedule "a" as attached to the Code recommended by the Administrator is approved with the understanding that, any basic minimum rates not fixed therein may be approved or prescribed by the President at any time prior to the effective date of this Code by a supplementary Executive Order.

(4) Because it is evident that attempts by those submitting Codes to interpret Section 7(a) of the National Industrial Recovery Act have led to confusion and misunderstanding, such interpretations should not be incorporated in Codes of Fair Competition. Therefore, paragraph (b) of Article V must be eliminated without, by this exclusion, indicating disapproval in any way of the joint statement of the Administrator and general Counsel of the National Recovery Administration, which has been attached to the Code as Schedule "B" and was incorporated by reference in said paragraph (b) of Article V.

(5) The exception to the definition of "employee" in Article II belongs in Article III. Accordingly, the words "except members of the executive, supervisory, technical, and confidential personnel" are stricken from the third paragraph of Article II. These same words are inserted in the first paragraph of Article III after the words "no employee."

FRANKLIN D. ROOSEVELT.

September 18, 1933.

# SCHEDULE A Basic Minimum Rates

	MINIMUM INSIDE SKILLED LABOR		MINIMUM OUTSIDE COMMON LABOR	
	Per Day	Per Hour	Per Day	Per Hour
<b>District A</b>				
Pennsylvania <sup>1</sup>	\$4.60	57½	\$3.60	45
Ohio	4.60	57½	3.60	45
Lower Peninsula of Michigan	4.60	57½	3.60	45
Panhandle District of West Virginia <sup>2</sup>				
Somerset County, Pennsylvania	Note A	Note A	Note A	Note A
<b>District B</b>				
Northern West Virginia <sup>3</sup>	4.36	54½	3.36	42
Preston County, West Virginia	Note A	Note A	Note A	Note A
<b>District C</b>				
Southern West Virginia <sup>4</sup>	4.20	52½	3.20	40
Eastern Kentucky <sup>5</sup>	4.20	52½	3.20	40
Upper Potomac District of West Virginia <sup>6</sup>	4.20	52½	3.20	40
Maryland	4.20	52½	3.20	40
Virginia	4.20	52½	3.20	40
Northern Tennessee <sup>7</sup>	Note A	Note A	Note A	Note A
Whitley, McCreary, Bell, and Harlan Counties of Kentucky	Note A	Note A	Note A	Note A
<b>District D</b>				
Indiana <sup>8</sup>	4.57½	57 1/5	4.20	52½
Warrick and Vanderburgh Counties of Indiana	Note A	Note A	Note A	Note A
<b>District E</b>				
Illinois	5.00	62½	4.00	50
<b>District F</b>				
Iowa <sup>9</sup>	4.70	58¾	4.00	50
Wayne and Appanoose Counties of Iowa	Note A	Note A	Note A	Note A
<b>District G</b>				
Missouri, Kansas, Arkansas, and Oklahoma	3.75	46¾	3.28	41
Texas	Note A	Note A	Note A	Note A
<b>District H</b>				
Western Kentucky <sup>10</sup>	Note A	Note A	Note A	Note A
<b>District J</b>				
Alabama	Note A	Note A	Note A	Note A
Georgia	Note A	Note A	Note A	Note A
Southern Tennessee <sup>11</sup>	Note A	Note A	Note A	Note A
<b>District K</b>				
New Mexico	4.48	56	3.75	46¾
Southern Colorado <sup>12</sup>	4.44	55½	3.75	46¾
<b>District L</b>				
Northern Colorado <sup>13</sup>	5.00	62½	3.75	46¾
<b>District M</b>				
Utah	5.44	68	4.48	56
<b>District N</b>				
Southern Wyoming	5.42	67¾	4.44	55½
Northern Wyoming	5.42	67¾	4.54	56¾
<b>District O</b>				
Montana	5.63	70¾	4.82	60¼
<b>District P</b>				
Washington	5.40	67½	4.00	50
<b>District Q</b>				
North Dakota	4.00	50	3.20	40
South Dakota	4.00	50	3.20	40

<sup>1</sup> Excludes Somerset County.

<sup>2</sup> Includes Hancock, Brooke, Ohio, and Marshall Counties.

<sup>3</sup> Includes Monongalia, Marion, Harrison, Taylor, Lewis, Barbour, Gilmer, Upshur, Randolph, Braxton, and Webster Counties and those mines in Nicholas County served by the B. & O. R.R.

<sup>4</sup> Includes all mines in counties not named under districts A and B and the Upper Potomac District.

<sup>5</sup> Includes all mines in Kentucky located east of a north and south line drawn along the Western boundary of the City of Louisville except those located in Whitley, McCreary, Bell, and Harlan Counties.

<sup>6</sup> Includes Grant, Mineral, and Tucker Counties.

<sup>7</sup> Includes all counties not named under Southern Tennessee in District J.

<sup>8</sup> Excludes Warrick and Vanderburgh Counties.

<sup>9</sup> Excludes Wayne and Appanoose Counties.

<sup>10</sup> Includes all mines in Kentucky west of a north and south line drawn along the western boundary of the City of Louisville.

<sup>11</sup> Includes Marion, Grundy, Sequatchie, White, Hamilton, Bledsoe, and Rhea Counties.

<sup>12</sup> Includes all counties in Colorado not named under District L.

<sup>13</sup> Includes Jackson, Larimer, Weld, Boulder, Adams, Arapahoe, El Paso, Douglas, Elbert, and Jefferson Counties.

NOTE A—Where minimum rates are not shown in the foregoing schedule, minimum rates shall be approved or prescribed by the President, prior to the effective date of this Code.

NOTE B—Differences between districts in the foregoing minimum rates are not to be considered as fixing permanent wage differentials or establishing precedents for future wage scales.

# SCHEDULE B\* Statement Concerning Section 7(a) of National Industrial Recovery Act

The plain meaning of Section 7(a) cannot be changed by any interpretation by anyone. It is the function of the Administrator and the courts to apply and to interpret the law in its administration; and no one else can assume this function and no official interpretation can be circumscribed, affected or foreclosed by anyone writing his own interpretation into any code or agreement. Such an interpretation has no place there and cannot be permitted.

The words "open shop" and "closed shop" are not used in the law and cannot be written into the law.

These words have no agreed meaning and will be erased from the dictionary of the N. R. A.

The law requires in codes and agreements that "employees shall have the right to organize and bargain collectively through representatives of their own choosing."

This can mean only one thing, which is that employees can choose anyone they desire to represent them, or they can choose to represent themselves. Employers likewise can make collective bargaining with organized employees, or individual agreements with those who choose to act individually; provided, of course, that no such collective or individual agreement is in violation of any State or federal law. But neither employers or employees are required, by law, to agree to any particular contract, whether proposed as an individual or collective agreement.

The law provides that employees shall be free from the interference, restraint or coercion of employers in the exercise of their rights established by the law. The conduct of employers which is here prohibited has been defined by the Supreme Court in the case entitled—*T. & N. O. R. R. v. Brotherhood of Railway Clerks*, 281 U. S. 548. The rulings of the Supreme Court lay down the law which governs the N. R. A.

Under Section 7(a), employers are forbidden to require "as a condition of employment" that an employee shall either "join a company union," or "refrain from joining, organizing, or assisting a labor organization of his own choosing." The law does not prohibit the existence of a local labor organization, which may be called a company union and is composed only of the employees of one company. But it does prohibit an employer from requiring, as a condition of employment, that any employee join a company union and it prohibits the maintenance of a company union, or any other labor organization, by the interference, restraint or coercion of an employer.

If there is any dispute in a particular case over who are the representatives of the employees of their own choosing, the N. R. A. will offer its services to conduct an impartial investigation and, if necessary, a secret ballot to settle the question.

The N. R. A. will not undertake in any instance to decide that a particular contract should be made, or should not be made between lawful representatives of employees and employers; or to decide that a contract which has been lawfully made should not be enforced.

Cooperation in all industrial relations depends largely on the making and maintenance of agreements. The N. R. A. will promote and aid such operation.

HUGH S. JOHNSON,  
DONALD R. RICHBERG.

## Anthracite

THE Anthracite industry has been involved in the development of a code of fair competition under NIRA, and submitted to the Administration a tentative code, during September, although no action has been taken upon it, and there seems to be a lack of agreement among the major producers as to its contents. The problem in the Anthracite field is a difficult one, but it is anticipated that early agreement will be possible. Anthracite production showed a decrease for

\* See (4) of Executive order.



the week ending September 9, although August showed an increase. Press reports indicate that The Glen Alden Coal Company will reopen the Baker Colliery on September 25, which employs about 1,500 miners. The Hudson Coal Company will reopen its Marvine Breaker, which has long been idle.

Shipments of anthracite for the month of August, 1933, as reported to the Anthracite Institute, amounted to 3,941,564 net tons. This is an increase, as compared with shipments during the preceding month of July, of 730,031 net tons, or 22.73 percent, and when compared with August, 1932, shows an increase of 891,748 net tons, or 29.24 percent.

According to a report of the Ore and Coal Exchange, Cleveland, Ohio, the lake shipments of anthracite for the month of August amounted to 72,572 net tons as compared with 46,198 tons in the same month of 1932, and 130,619 tons in 1931. Total shipments to the end of August have amounted to 264,531 net tons as compared with 173,176 tons in 1932 and 610,370 tons in 1931.

## Copper

THE Copper market continues quiet, with further conferences on the copper code, hearing for which has not yet been set. L. S. Cates, president, Phelps Dodge Corporation, expressed utmost faith in the successful working out of N. R. A. and believes that there will be an early improvement in the price of copper, as a result of a general business recovery. He spoke in favor of the present copper tariff, which he felt "is excluding the product of cheap foreign labor, with the result that the American market is gradually absorbing the still large surplus of copper—a surplus that will rapidly diminish as industry recovers its stride." Mr. Cates said that 94 percent of all the American copper companies have signed the code as submitted to N. R. A.

Custom smelters have submitted separate codes, which provide that, although there is no limit set on their production, these groups shall not sell copper below cost of production. It is essentially a labor code, and makes no provision for fair competition and trade practice, but provides for the filing of supplementary codes covering those phases. Minimum wages have been set at from 30 to 35 cents an hour, and hours of labor provide a maximum of 40 hours per week.

C. F. Kelley, president, Anaconda Copper Mining Company, in a recent interview states that he felt that the copper industry would be restored to a relatively normal condition shortly, if the progress made in the last six months is sustained. He pointed out that consumption is considerably above production and that during recent months, surplus stocks have been reduced 100,000 short tons. Mr. Kelley also pointed out that:

"The copper mining business has suffered as grievously as any other industry. Yet in the last six months we have made encouraging strides toward recovery. But before we can hope for anything like normal conditions in the industry the surplus must be still further cut down.

"One of the especial difficulties which our industry has had to face, the like of which did not plague other industries, was the development during this depression of tremendous new production possibilities just at a time when consumption demand for the metal was crumbling. Newly developed copper properties in two continents in some of which the red metal is a by-product, put their production on the market and dealt a blow to the industry's equilibrium which it has been extremely difficult to overcome.

"Nevertheless, in common with all other businesses, we have made great strides since the discouraging days of last February, when we reached such a decline in the demand for metal that to look into the future tested the courage and the determination of all. It was soon thereafter that President Roosevelt launched his plan to resist the chaos that was confronting the nation. That plan already has carried us far. We work and strive to make this plan of recovery a success or we sink back into the mire of stagnation and chaos which we avoided six months ago."

In some quarters it is predicted that higher prices are in prospect, and that under the weighted average cost to be established under the code, the minimum price for electrolytic copper may be around 10 cents a pound.

The Utah Copper Company has increased wages at its Magma and Arthur plants. The American Smelting, Refining & Mining Company has posted notice of an increase in wages affecting 400 employees. The Silver King Coalition Mines Company has raised wages 75 cents a day, with Titanic Standard Mining Company also increasing its payroll.

## Gold

THE outstanding development in the gold situation was President Roosevelt's orders giving producers world gold price, and requiring licenses for holders. An analysis of the order follows:

"The Treasury Department, under new gold regulations, will set a daily price for newly mined metal eligible for export. The regulations provide that in estimating standard price the Treasury secretary shall use the best price obtainable abroad, less expenses incident to shipment and sale. Newly mined metal may be turned in for sale to any United States mint or assay office, unless gold was held prior to August 28, 1933. Gold will be received in amounts of not less than two ounces of fine gold. No consignment may contain less than 200 parts of gold in 1,000 by assay. Proceeds of sales, less charges, shall be paid the consignor by the reserve bank of the district where such gold was deposited. In cases of sales made abroad, 98 percent of net proceeds will be paid upon telegraphic advice that payment has been made abroad and remainder upon confirmation by mail."

A new federal gold regulation, promulgated about September 12, permits the free sale of unmelted scrap gold to licensed arts and crafts users, with prices to be governed by supply and demand, rather than by government proclaimed quotation. The regulation also permits export of fabricated gold where the value of the articles in question depends upon the workmanship rather than bullion content. Only articles made from newly mined gold may be shipped abroad. Rules governing newly mined gold were amended to enable the reserve banks to hold the metal for two days after it has been certified for sale.

Under this ruling and the lifting of the embargo the price of newly mined gold has steadily advanced, until it reached an all time high level of \$32.28, on September 20.

According to the American Metal Market, gold production of the world, as statistically reported, showed an increase in July over June.

With seven months of this year elapsed the outlook is for a total production a little larger than in 1932. This forecast is made with the usual reservation in respect of Russia.

### Gold Production of the World—1933 (In thousands of fine ounces)

	June	July	Jan.- July
United States (a)...	143	176	1,307
Canada .....	240	243	1,679
Mexico .....	48	50	354
South America .....	64	68	431
British India (e) .....	26	28	197
Japan (e) .....	36	36	242
Australasia (b) .....	98	97	635
South Africa .....	919	924	6,483
Belgian Congo .....	22	22	149
Rhodesia .....	55	54	363
British W. Africa .....	28	29	192
Russia (c) .....	*160	*160	1,120
Elsewhere (d) .....	*75	*75	505
Total .....	1,914	1,902	13,657

The production of direct gold is normally higher in the second half of a calendar year than in the first half, owing to seasonal conditions, a large part of this gold coming from the placers and dredges of Alaska. The gold emanating through private refineries would normally be more regular, but in 1932 and 1931 that production has been

affected by the curtailment of copper and lead production. The monthly statistics of gold receipts by the Mint in the first half of 1933 have been very erratic and probably reflect irregularities in the transfer of the product from the mines, etc., to the Mint.

### Gold Production of the United States —1933

	Private smelters and refiners	Exports in U. S. Mint base ore and receipts bullion	Total
Jan. ....	94,580	115,188	293 210,061
Feb. ....	57,885	89,016	1,423 148,324
Mar. ....	64,538	187,694	913 253,145
Apr. ....	68,160	120,461	1,409 190,030
May ....	71,007	114,017	1,600 186,624
June ....	77,710	64,445	1,078 143,233
July ....	73,451	99,581	3,268 176,300
Tot. ....	507,331	790,402	9,984 1,307,717

"Attention may be given to the delivery of gold for use in manufactures and the arts and the return flow of old gold. In the period 1880-1932 the quantity of gold furnished for such uses in the United States was about \$1,800,000,000 whereof the re-issue of old material was about \$650,000,000, leaving about \$1,150,000,000 still in use, less physical loss. In 1929 the industrial issue of gold was about \$57,000,000 whereof about \$32,000,000 was from old material. Since then the industrial quantity has been annually declining, until in 1932 the total was only about \$26,600,000; but the proportion of old gold entering into the delivery has not declined in anything like the same ratio. Out of a total of \$29,000,000 in 1931 the old gold accounted for \$23,227,000. In 1932, however, the old gold returned from industry amounted to \$26,600,000 and exceeded all gold issued to industry (\$20,100,000) by about \$6,500,000. These statistics indicate the immense reserve that exists among the people in the form of jewelry, etc., and how some of it has lately been liquidated. In both Great Britain and Russia, and perhaps in some other countries there has been such liquidation on a much more extensive scale.

"Of the production of gold in the United States in 1931 according to the United States Bureau of Mines, about 20 percent was derived from placers, 18 percent by cyanidation, 37 percent by amalgamation, a total of 75 percent that may be described as direct gold passing chiefly to the Mint for refining; and about 25 percent by the smelting of copper, lead and siliceous ores."

## Iron

WHILE the iron ore producers have presented a code to the N. I. R. A., no action has been taken upon it, and there seems to be no special developments in relation to it. Meanwhile, producers are operating under P. R. A., and many have established higher wage scales, shorter hours, and company unions.

Imports of iron and steel products into the United States during June increased 30 percent compared with May, according to the Iron and Steel Division of the Commerce Department. Imports for the first six months of 1933, however, were 27 percent under the corresponding period of 1932. June imports amounted to 34,368 gross tons, an increase of 8,073 tons over the May total of 26,295 tons. Imports of iron and steel products into the United States during the first six months of this year amounted to 152,478 gross tons compared with 208,995 gross tons in the first six months of 1932. The report stated that the increased imports of iron and steel products in June was due to heavier receipts of ferro-manganese, pig iron and structural shapes. Receipts of ferro-manganese from Canada placed that country in the lead among the nations supplying iron and steel products to the United States. Pig iron imports originated chiefly in the Netherlands and British India. Belgium supplied the United States with the bulk of imports of shapes, merchant bars and hoops and bands.



United States exports of scrap iron and steel during the first five months of 1933 totaled 290,523 gross tons compared with 93,758 tons in the corresponding period of 1932, according to the Commerce Department. The increase was due to increased buying in four important steel producing countries—Japan, Italy, Germany and Poland. Of total exports of scrap iron and steel from the United States in the 1933 period, 210,933 tons were taken by Japan, 13,370 tons by Italy, 15,869 tons by Germany and 13,370 tons by Poland. Shipments were made to 15 other countries during the five-month period. The iron and steel division pointed out that scrap iron and steel is in demand wherever supplies of iron ore are low or inadequate to satisfy local requirements. A saving of fuel also may be made when steel is produced from scrap instead of from pig iron.

According to Skillings, the Hibbing and the Chisholm districts of the Mesabi iron range of Minnesota, have shown steady improvement for employment of its people with the resumption of iron mining. The Republic Steel Corporation has the Susquehanna and the Alexandria mines in production, and has added men to its force in the past few weeks. The Susquehanna mine was last operated by The M. A. Hanna Company, but this year is on the Republic list for the first time. Cleveland-Cliffs placing the Drew mine in production this month will aid the employment picture. The Oliver Iron Mining Company and the Snyder Mining Company have power shovels loading out ore. Pickands, Mather & Company is operating the Dunwoody at Chisholm at good rate.

**I**N THE first issue of the "Minerals Yearbook" just published, the United States Bureau of Mines announces a change in the method of presenting statistics and economic discussions on minerals.

A review of our mineral industries reveals a recession during the last three years unprecedented in extent and duration, comments Scott Turner, Director of the Bureau of Mines, in the first part of the volume. This condition was due principally to the inability of markets to absorb the output of the mills and factories that normally provide an outlet for the products of mines and smelters, Mr. Turner states. Mineral producers marketed small quantities and obtained low unit prices. Retrenchment in mining activity was not limited to our national boundaries, but was world-wide.

During the five-year period 1925-29, when world output of minerals surpassed in quantity and value that of any other equal period in history, the total value was approximately \$70,000,000,000, the annual average being about \$14,000,000,000. In 1930 this total annual value dropped to about 12½ billion dollars, 89 percent of the average for the preceding five-year peak period. In 1931 the total fell to about \$9,000,000,000; in 1932 the value of world mineral production was roughly, \$7,000,000,000, one-half the yearly average from 1925 to 1929.

Domestic mineral production had a total value of about \$29,000,000,000 from 1925 to 1929, a yearly average of approximately 5.7 billion dollars. In 1930 it was 4.8 billion dollars; in 1931 the total had fallen to 3.2 billion dollars. For 1932 our mineral production was worth about 2.4 billion dollars, a decrease of around 57 percent from the average

## Lead and Zinc

**T**HE Lead and Zinc situation was characterized by lowering of stocks, and by the raising of wages. No action has been taken on the codes of fair competition, although the zinc hearing is scheduled for October 3. In the Coeur d'Alene district three of the leading mining companies granted increase in wages, and added employment. These companies were Hecla Mining Company, Bunker Hill and Sullivan Mining & Concentrating Co., and Federal Mining and Smelting Company, who announced a raise of 50 cents a day affecting 2,384 men. The notices specify that the wage scale will remain in effect as long as the price of lead in New York remains at 4.5 cents a pound or higher. A review of the Joplin zinc market, states:

"Increasing prices, production and shipments with diminishing stocks marked the month's transactions in lead and zinc concentrates in the Joplin district. Total shipments of zinc concentrates reached 26,605 tons or an average of 6,650 tons per week, the largest for any month since January of this year. The market price average was practically \$35 for the entire month which was also the highest average for the year, and approximately 90 percent greater than that of January when so much tonnage was shipped.

"Production of zinc concentrates has shown a steady increase during the month rising from 4,300 tons to 6,200 tons during the month. This was due to the overhauling of old mills long idle, the addition of some tailing mills and the stepping up of

tonnage of other plants already in production. Increases in production are coming mainly from two sources only, that of old mines and mills being reconditioned for operation and from tailing mills being built on old tailing piles. New mines are not available and this year will see only one or two such properties for the whole period. This means a definite limit on production in the Tri-State district for the next 12 months.

"Stocks of concentrates in the district have reached disturbingly low limits, the total stocks now available being estimated at approximately 8,000 tons or but slightly over one week's output. The smelters' present requirements from the district are slightly in excess of 6,000 tons per week or approximately equivalent to the production at the present time. If demand continues unchanged and there is no accumulation of stocks between now and the winter season when production is nearly always interrupted more or less, there will be no reservoir of stocks upon which to draw this coming winter to supply smelter needs.

Lead shipments and prices exceeded those of any month this year, reaching a total of 4,087 tons for the month with an average price of \$52.58. Stocks of lead concentrates are dwindling again being estimated at the month end at 9,400 tons as compared with its opening of 11,000 tons. Production while increasing slightly during the month did not increase proportionally with zinc.

According to the Tri-State Zinc and Lead Ore Producers Association bulletin for week ending September 16, total stocks of zinc were:

	Zinc Concentrates			Lead Concentrates		
	This Week	Year Ago		This Week	Month Ago	Year Ago
(Sold and Unsold) .....	7,304	8,502	69,826	10,489	12,299	17,118
Net Reserve Stock .....	4,463	2,053	68,191	10,237	11,870	17,043
Production (*) .....	6,162	5,691	2,217	863	694	252
Shipments .....	5,615	6,150	2,848	852	1,236	260
Sales Reported .....	5,130	8,413	3,336	630	1,012	253
(*) NOTE: Flotation production Included:						
(From mine dirt and tailings) .	2,519	2,095	454			
Base Price—Joplin .....	\$31.00	\$35.00	\$20.00	\$52.50	\$52.50	\$35.00
* * *						
Mill Statistics				This Week	Last Week	Month Ago
Number operating single shift full time .....				11	8	8
Number operating part time .....				10	12	10
Number operating double shift or overtime .....				6	6	4
Number tailing mills operating .....				13	12	9
Total .....				40	38	31
						15

value for the five-year period. Of the three main groups of minerals, the general recession has affected metals and mineral fuels least.

Gold and natural gas still exceed the average yearly quantity produced during the boom period; petroleum and salt have held up well. All other mineral commodities have experienced major declines, with pig iron the greatest sufferer among the important metals. There were also extreme decreases in copper and zinc production, and the wide sweeping character of declines in output attests the severity of recession in mineral-consuming activities.

Fifty-nine authors, all on the Bureau staff, contributed to the 61 economic and statistical surveys in this volume. There are 819 pages, divided about equally between descriptive text and charts and tables. The cloth binding is distinctive, and the volume provides the

mineral industries with adequate data in more convenient form at an earlier date than elsewhere or heretofore available. Copies may be purchased by anyone for \$1.25 from the Superintendent of Documents, Government Printing Office, Washington, D. C., to which official is delegated the sale of all Government publications. That agency is in no way connected with the Bureau of Mines and no money derived from sales reverts to the Bureau.

**A**PPROXIMATELY 69 percent of the estimated 7,397,000,000,000 (trillion) metric ton coal reserve of the world is located in North America while Asia, the next ranking world source of coal, is credited with 17 percent of the resources, according to a study of world production of major minerals by the Minerals Division, Department of Commerce.

# HAVE YOU HEARD—?

PITTSBURGH COAL COMPANY has awarded a contract of \$100,000 for coal transfers in connection with new railroad now being constructed to connect industries in Youngstown, Ohio, with the Ohio River.

IN 1932 the states spent nearly a billion dollars on highways, surfacing 29,500 miles of road, and grading more than 6,000 miles, at an estimated expenditure of \$955,446,000, which includes maintenance, interest on bonds, and other miscellaneous expense.

THERE IS NOW being conducted a Government investigation of nation-wide proportions into the salaries of executives of private corporations, utilities and banks. A large part of the investigation will come under the direction of the Federal Trade Commission.

DONALD RICHBERG, counsel for NRA, says that organized labor must play an important part in the recovery program, and simultaneously William Green, president, American Federation of Labor, threatens open fight to secure national shorter work-week. He estimated that some eight million men will be out of work this winter in spite of NRA program.

BENGUET CONSOLIDATED MINING COMPANY, operating mines in the Philippines, plans extensive development of chromium deposits in the Province of Zambos Camarines, and plan to spend about \$125,000 on the project immediately.

AMERICAN SMELTING & REFINING COMPANY will pay world price for gold, using this price each day in calculating return to shippers, after deducting smelting, refining and other charges.

ACCORDING to the National Industrial Conference Board, mining production in the United States, for the first seven months of 1933 was up 12.5 percent.

TREASURY DEPARTMENT on September 18, set a gold price of \$31.44 per ounce for sales of newly mined gold to licensed arts and crafts and for export, which sets a new high record.

THE NATIONAL LABOR BOARD in a unanimous decision, has upheld the right of workers to be represented by outside agents in negotiations with employers. The decision was rendered in the case of the Berkeley Woolen Mills, Martinsburg, W. Va., who were accused of violating the woolen code by refusing to deal with officials of the United Textile Workers, which had been selected by striking employees as their representative.

ACCORDING to announcement the Bureau of Internal Revenue will speed its decisions in all tax trials pending before the U. S. Board of Tax Appeals, with the aim of final disposal before the end of the year. The legal department of the Bureau has been reorganized, and expects to expedite matters. The bureau has urged individual cases set for trial outside of Washington, to transfer cases here in order to speed matters.

MANUFACTURERS predict price rise for jewelry as a result of the lifting of the gold embargo, and the consequent increase in cost of gold, which they estimate will be approximately 30 percent.

JAMES M. COX, United States delegate to the World Economic Conference, believes that ultimately stabilization of currencies and world economic planning must come.

THE COUNSEL for NRA, Mr. Richberg, states that "labor organizations are more necessary now than ever, and are important not only to advance interests of industrial workers, but to protect and promote the security and freedom of all those who live in the modern world."

SOVIET OIL output for the first six months of 1933 was 10,416,000 tons, which is smaller than the similar period of 1932.

FELDSPAR is an essential ingredient of opalescent glass, used widely in modern building construction. It is also used as a flux in the manufacture of glass, pottery, enamel and sanitary ware.

LOADINGS of revenue freight during the first 34 weeks this year show an increase of 1.6 percent, and a decrease of 27.2 percent over 1931 loadings.

THE CANISTOE-CLIFFS MINING COMPANY, at Coleraine, Minn., uses three common modes of power at one operation. They have in use three power shovels, one each driven by the use of electricity, steam and gasoline.

THE ISHPERING GOLD MINING COMPANY, near Ishpeming, Mich., is making assays on samples taken from trenching on surface. This company plans rehabilitation of a property operated in the 80's, and upon which no work has been done in 30 years.

A NEWLY MADE CITIZEN asked what Americans meant by "the three R's." A wag told him that these three R's followed us through life. At 25, it's Romance; at 45, it's Rent; and at 65, it's Rheumatism.

THE FEDERATED TRUCK ASSOCIATION OF AMERICA recently formed, said to compose truck and highway associations in 24 states, has drafted a code which provides for a 48-hour week and a minimum wage of 40 cents per hour.

VARIOUS GROUPS represented within the American Federation of Labor, aggregating a million and a half workers, recommend aggressive campaign for five-day week, and six-hour day, as a means to take up slack caused by technological unemployment. They regard the shorter working period as an imperative step.

DR. ROBERT MAYNARD HUTCHINS, president of the University of Chicago, in an address to the Bond Club, endorsed heartily President Roosevelt's "Brain trust" and college professors.

AGGREGATE NET OPERATING INCOME of the first 16 railroads to report for August showed a substantial increase over total for 1932 similar period, their net being 82.5 percent over the 1932 showing. Their gross revenue in August aggregated an increase of 13.6 percent over August a year ago.

ZINC OUTPUT IN TRI-STATE DISTRICT is increasing, with much activity in the Missouri district. Many new concerns have started operation, old mills are being reconditioned, and churn drills are active.

HELIUM HAS BEEN DISCOVERED in six different districts in Russia, according to government reports, which state that the supply is larger than our Texas deposits.

NEW YORK UNIVERSITY has doubled its extension courses because of the leisure time allowed workers through NRA codes.

PRESS REPORTS STATE that the anthracite coal operators will shortly agree upon a code of fair competition, and ask for early hearing. The indication is that wage scales, which are the highest paid in the country, will remain the same.

THE HIGH PRICE FOR GOLD is stimulating search for the precious metal throughout the western states. Montana reports extensive activity with new companies being organized for production from old properties.

# LEGISLATION

WASHINGTON has continued its mad pace in its effort to get all industry under Government supervision and regulation before October 1. The original goal was "before Labor Day" and, when that proved an impossibility, the date was advanced. Great progress has been made, with most of the major industries now functioning or preparing to function under Codes of Fair Competition. The bituminous coal code proved the most difficult to manage, and it was brought under the Government's wing only by threat of nationwide strike and Presidential order. Other units of the mining industry have their codes well toward completion, although no hearings have as yet been held. The Zinc Code Hearing is set for October 3. Copper, iron, lead, and anthracite coal have submitted codes, but hearings have not so far been scheduled.

The National Recovery Administration is growing so rapidly and moving so swiftly that it is difficult to keep up with the procession. Most Washington observers have long since ceased trying and are confining their attention to certain phases of this great organization. General Hugh S. Johnson, who is proving himself a human dynamo—who works hour after hour under high pressure, who moves steadily from one meeting to another, who hops into airplanes for a mad dash across the country for conferences—cannot keep up with the details of his organization in spite of all his efforts. He has repeatedly admitted error. Some idea of the size of this stupendous task may be gained when it is learned that it is estimated that the industries of the United States may be roughly classified into 20,000 major units. Twenty thousand industries is somewhat appalling, but each of these major groups must be divided into thousands of units, each unit feeling its importance and insisting upon individual codes and special consideration.

Topics that have Washington all but submerged are:

1. **Inflation**, which involves the **Commodity Dollar**. The President is reported as lukewarm to the proposals of southern representatives for immediate inflation, but the rumor is persistent that inflation in some form will be a fact before the end of the year. According to one Washington prophet:

"The Commodity Dollar, evolved behind locked doors, will be the administration's answer to more than vehement demands for inflationary steps. Recommendations of Professor Warren will be carried out. The Commodity Dollar is the least offen-

sive method to the administration with which to provide inflation. Pressure is being brought, not only by inflationists, but by the great farm area. Representatives in Washington may be expected to respond more and more actively to 'suggestions' of their constituents. The reduction in the gold content of the dollar, and its attendant periodic fluctuations with actual price levels, will mean that the dollar value will represent actual purchasing power measured in terms of those things which the consumer has to buy. Farm prices are lagging dangerously. The enormous farm population of this country have raised the hue and cry for lessened disparity between the return for products and costs of necessities. Some reasonable form of inflation must be set in motion by the administration or the Congress, which reconvenes in January, will take steps to force 'greenbacks.'"

2. **Credit**. There is a definite effort on the part of the administration to expand credit to meet the present situation. An effort is now being made to get money into the hands of industry. The RFC is in line to lend 3 percent, which in turn may be re-loaned at 5 percent.

3. **Price Control**. Under the Codes of Fair Competition it is certain that price control must be inaugurated. Price fixing under the oil code has been delayed, as has the control of retail prices, but it seems inevitable that this step will be taken.

4. **Securities**. There is a lively uproar about the stringent regulations of the Securities Act of 1933. The fact-finding commission studying this subject has threatened even greater restrictions when Congress reconvenes, and a real effort will be made to keep the present restrictions and find new ones.

5. **Tariff**. The question of the tariff is still squarely before the administration, with nothing being done about it. While official Washington waits, thousands of tons of material are being dumped into the United States and, unless this practice shall cease, many of the industries

which the administration hopes will be substantial employers will need to close down their properties and throw out of employment the men already employed. The quicksilver industry is a case in point. Daily importations of foreign mercury make it more apparent that unless something is done immediately, the quicksilver industry in this country will cease to operate. There is a considerable group of minerals in this category, and the President is being urged from many quarters to take quick and drastic action. These industries point out that they cannot raise wages, shorten hours, and increase employment without assurance from the Government, which asks them to do these things, that the domestic industry will not be penalized for so doing.

6. **Patronage**. This is both an amusing and a serious situation. There is growing unrest in the "provinces" and the air is full of threat of reprisal. Governors' cars from the various states are familiar sights on Washington streets. It is said that Congress is "ready for Mr. Roosevelt and some of his Cabinet members" at the next session of Congress, although it is a question as to how far they can go with the admittedly wide public endorsement of the President and his policies, and in some quarters it is indicated that the public may applaud the policy of job-giving on merit rather than as plums for political service. It is intimated that one method of retaliation may be through appropriations next year, and the departments that may get the axe are said to be Agriculture, Interior and Labor.

No one visiting Washington and its multiplicity of departments, bureaus, commissions, authorities, or what-have-you, can miss the fact that this is a Labor Government—a truly "of-by-and-for-the-people." The old order is distinctly changed and the college professor is no longer sitting in an obscure corner. It is somewhat of a shock to good old fashioned conservatism to find that a telegram directed to the President finds its way to the hands of an important labor official for action and reply! Amid the shouts of applause there

(Concluded on page 20)





# MODERN MINING PRACTICE

## Solving Some Safety and School Problems at the Coal Mines Near Kemmerer, Lincoln County, Wyo.<sup>1</sup>

By G. M. KINTZ<sup>2</sup>

THE MECHANIZATION of coal mines has brought with it the problem of educating employes in the safe and proper use of modern machinery. This problem is complicated by the fact that, since the beginning of the industry, tomorrow's miners have usually been the sons of today's miners and each in turn has learned the trade from his father. In this rapidly changing machine age this method is inadequate unless supplemented with additional training.

The introduction of mechanical loaders has concentrated mining and resulted in speeding up and accurately timing operations, especially haulage; this requires, among other things, quick and proper thinking to offset the increased hazards. Any accident or unnecessary delay of a machine's function may not only injure one or more workmen, but very likely will tie up the work of several employes and thus spoil the machine's effectiveness. Hence, it has become necessary that the men operating the machinery have properly trained minds.

Many coal operators have already realized that mechanization of mining requires that their employes have additional and even specialized training if accidents and operating costs are to be kept within reasonable limits.

Table 1 shows the increase in the percentage of mechanically loaded coal in Wyoming for the past six years, according to annual reports of the State inspector of coal mines.

TABLE 1.—TONNAGE AND PERCENTAGE OF MECHANICALLY LOADED COAL IN WYOMING, 1926-1931

Year	Total production, tons	Coal mechanically loaded, tons	Coal mechanically loaded, percent
1926.....	6,495,815	1,472,934	22.8
1927.....	6,738,561	2,013,449	29.9
1928.....	6,553,174	2,811,588	42.8
1929.....	6,699,779	3,255,405	48.5
1930.....	6,070,769	2,954,866	48.67
1931.....	5,003,365	2,798,319	55.96

In 1927-1928, while the coal companies near Kemmerer, Wyo., were further developing and increasing the number of their mechanical loaders, they had difficulty in getting a sufficient number of competent operators for these machines; employes in their own organizations were not qualified to do much more than start and stop the machines and most of them were of types which could not be trained to the work. Specially trained men from the outside were not satisfactory because they knew little about local mining conditions; besides, it was desirable to develop the necessary men from their own organization if possible. At this time several high-school students, sons of miners, were asking for work at the mines and in some cases school authorities were having difficulty in holding these boys in school. Officials soon believed that men with the necessary qualifications for the newer and more highly specialized types of mining work could be developed locally by two methods: first, by a course in the high-school curriculum on the rudiments of coal mining for those boys who were anxious to enter mines; second, by conducting a special training school for such miners as desired to improve their qualifications and had the mentality to do so.

In March, 1929, the coal-mining operators, heads of the State Division of Vocational Education, and the local high-school officials formed an association to attempt to solve these problems.

A course of study in sheet-metal work was being conducted at the Kemmerer high school. The equipment used in this course consisted of two engine lathes, a 14-inch shaper, a small drill press, one 10-inch power hack saw, an emery wheel, one blacksmith forge, one acetylene generator with

cutting and welding equipment, one 30-inch square shears, one 30-inch bar fold, one 30-foot slip roll, one complete set of stakes, and two fire pots.

It was decided to give this course to the junior high school students and to commence an elective related mining course in practical mining in the senior high school curriculum. The time required for this would not prevent a student from accumulating enough proper credits to enter college. The student, to enter the mining course, must have completed his junior high school work with four units credit, one of which must have been in algebra. His credits in senior high school were to be: English, 3 units; social sciences, 2 units; plane geometry, 1 unit; physics, 1 unit; related mining, 5 units.

A night-school course in mining and mining machinery construction was devised for the miners.

Table 2 shows the time allotted and the various subjects included in the related mining course.

TABLE 2.—SUBJECTS AND TIME ALLOTTED TO EACH SUBJECT IN COURSE GIVEN IN SCHOOL SHOP TO HIGH-SCHOOL STUDENTS

Subjects	First semester	Hours allotted Second semester	Third semester	Fourth semester	Total hours
Ventilation .....	185	15			200
Mine gases .....		175			175
Lamps .....		60			60
Timbering .....			100		100
Pumps and drainage .....			85		85
Haulage .....				100	100
Cutting and loading machines .....				85	85
Explosives and blasting .....				25	25
Shop practice .....	75	15	75	10	175
First aid and mine rescue .....	10	5	10	50	75
Total .....	270	270	270	270	1,080

In addition to these subjects, the student, during his senior year, must spend two weeks at one of the mining company's power plants, one week with the fireman in the boiler room and the other week with the engineman in the generator room. He must also work two weeks at the mine, on the surface and underground; here the student is instructed by company officials in the correct methods of performing mining operations such as timbering, coal cutting, transportation, hand and mechanical loading, and other jobs.

Tabulations were compiled and used in instruction in mine ventilation; shop practice is summarized as follows: The objectives are mill-wright work and lubrication, erecting, bench work, use of files, sawing, tapping and threading, drill-press work, shaping, lathe work, including taper turning, threading, and advanced chuck and face-plate work; this involves considerable detail work. The teaching includes actual shop jobs, trips to mine shops, questions and answers, use of charts, safety practice, description of machines, suitable reference texts, and data for notebooks.

Since this course of study was initiated the school has purchased much equipment; also, local companies have donated broken or worn-out machinery, some of which the boys have repaired and turned into use in their studies.

These donations include a 25-horsepower vertical boiler, two upright steam engines, a reciprocating steam pump, a steam turbine, a direct-current generator, and other smaller equipment. The boys have repaired four steam pumps and have built four mine cars and a mechanical water-clarifier for use at the mines.

The increasing enrollment each year and the steady attendance of the students prove to the school authorities the success of the course. Of the 12 students enrolled in the course in the autumn of 1929, 4 graduated in 1930, 3 entering the mines and the fourth going to college. Of the 21 students enrolled in the autumn of 1930, 8 graduated in 1931, 5 entering the mines, 2 going to college, and the eighth not working.

<sup>1</sup> Published by permission of the Director, U. S. Bureau of Mines. (Not subject to copyright.)

<sup>2</sup> Associate Mining Engineer, U. S. Bureau of Mines, Denver, Colo.



Five of the 24 enrolled in the autumn of 1931 will probably graduate.

The boys that have been employed in the mines have proved themselves to be better and safer workmen who take more interest in their work than the average miner. In this, the course has been of definite benefit to the mine operators, and the evident advantages will probably expand as the years advance.

One operator cited the following ways in which the course has improved conditions in his mine: the boys are displaying such an understanding and making such good records that they have many of the officials realizing that they themselves had been in a "rut," and this has stimulated them to improve their supervision. The boys are saving the company money, as is indicated by the fact that when a coal-cutting machine broke down one of the students assisting the machine runner examined the machine, took the number of broken part, phoned it to the surface to a mechanic who brought the part with him into the mine; the machine was repaired and operating again in less than 30 minutes after it had broken down. Ordinarily, the mechanic would have had to go into the mine, examine the machine, send or go to the surface for the broken part, and thereby cause a much longer and more serious delay in operations.

The course has been a great help to the boys, some of whom have become so interested in their studies that they have gone to college. Those that have entered the mines usually are able to take leading parts in community affairs, and in this field they take active part in the union meetings. According to the same operator cited, they are helping to make a better feeling between the men and officials, as they seem to have a better understanding of the point of view of both sides.

The night school has also justified itself, but not to the extent of the high-school course; only 11 miners have attended the classes continuously. This course treats the following subjects: cutting and loading, machine construction and operation, 350 student hours; electricity as applied to such machines, 304 student hours. The cost of the course is borne entirely, except for donations of old equipment and services of the State and Federal Bureau of Mines employees, by the school funds.

The courses for both the high-school students and miners have been enlarged in scope because, in addition to the regular school instruction, special information is given by various coal-company officials, members of the State mine inspector's office, and the U. S. Bureau of Mines.

#### CONCLUSIONS

Mine operators at Kemmerer, Wyo., are by no means the first mining men to realize the need of better-trained employees; they have, however, taken definite steps to carry their ideas into effect and have cooperated with school authorities in developing a mining course of study which would produce trained employees from local high-school students.

While the course of study has been included in the school curricula only three years, it has definitely proved its value. The following is a brief summary of some of its accomplishments:

1. The cooperation of mining officials and school authorities has solved several problems confronting both; this has brought about an improvement in the schools, and economy with increased safety in mines.
2. The proper training of the future miner can most easily and effectively be accomplished while he is still a student in high school. Boys given the proper specialized training become better and safer employees than those who are allowed to enter a mine without such training. They also stimulate old employees in "job pride."
3. Boys who previously had little desire to attend high school have become interested in studies and some have continued them at college.
4. Educating the miner's son, or the future miner, in special mining courses is said to have reduced accidents and mining cost in the coal mines near Kemmerer.
5. The foresight of mining officials, State, and local authorities at Kemmerer in placing a mining course of study in the high-school curriculum has proved its worth; it has produced better students, citizens, and miners.
6. Usually relatively few miners will take advantage of any course of study which will better fit them for their work unless they are compelled to do so. This is an additional reason for trying to give training in mining to the youth of mining regions. In doing this, the general public, the mine operator, and the mine employee are alike benefitted.

## DRAINAGE FROM MINES IN THE THICK FREEPORT COAL BED, PENNSYLVANIA

By R. D. Leitch, W. P. Yant and R. R. Sayers

OF MORE than 300 bituminous mines examined by A. B. Crichton and his assistants in connection with litigation in Indian Creek Valley, Fayette County, Pa., only four were found to have alkaline water. That work and many observations of the authors have shown the general prevalence of acid drainage from bituminous coal mines. In connection with investigations pertinent to coal-mine drainage that are being conducted by the United States Bureau of Mines it was noted with considerable interest, therefore, that a mine in the Thick Freeport bed about 20 miles north of Pittsburgh had no acid water in the workings. As it was thought that this condition might be common to all mines in this bed, most of them were visited, samples of the outflow and from different parts of the mine inside were examined, and such general information as was available was gathered.

The conclusions reached as the result of this investigation are as follows:

1. Most mines in the Thick Freeport bed have either no acid water or have alkaline water in the majority of places.

2. Gob material, which is largely bone coal low in sulphur from the center of the bed, does not usually exert any great influence on the tendency to form acid waters. This is contrary to the usual finding in bituminous coal mines.

3. Drippers and water from cracks in the roof are always strongly alkaline, even though the depth of cover is relatively great and no evidence of breaks to the surface is observed. This indicates a subsurface source having a high alkalinity.

4. Some evidence is offered that water from or through the bottom which is high sulphur coal is acid, whereas water from other sources is alkaline.

5. A relatively large quantity of sodium and potassium salts and bicarbonates are held in solution in drainage from the Thick Freeport bed. Iron is not present to the extent often found in other mine drainage, and then usually not as sulphates. One indication of an iron phosphate combination was found.

6. The absence of acid drainage in the mines described seems to be due to the bicarbonates in solution which tend to neutralize any acid as soon as it is formed, or inhibit the formation of sulphuric acid by combining with the iron to form salts other than ferrous or ferric sulphates.

7. The mines working in the Thick Freeport bed drain into streams which flow into the Allegheny River, which is the source of the water supply for Pittsburgh. The daily discharge from the mines for which quantities are available ranges from about 5 to 15 millions of gallons. As this water is alkaline, it improves the general quality of the river water.

### The Recent Eye Survey

Digest of Article in "Employees' Magazine," Union Pacific Coal Company, July, 1933

AS THIS article is written, the visual surveys of 1,651 employees have been made. Of this number, 23.8 percent were found to have 20/20, or normal vision without glasses, leaving 1,258 employees, or 76.2 percent, with defective vision in either a minor or major degree. Of the total number examined, 28.35 percent were found to have major defects of vision, requiring correction.

In the majority of cases, it will be possible to furnish the men suffering from defective vision with goggles ground to correct, insofar as possible, the defects of sight, a few of the men, however, suffering from sight disabilities that prevent the possibility of supplying them with super-armor plate goggles ground to correct defects of vision. These certain cases will be taken care of by the men continuing to wear the glasses now worn by them, protective super-armor plate goggles furnished to be worn outside of the lighter glasses. This is not the best protection possible, but such will add a material measure of increased safety to the eyesight of the wearer.

# PERSONALS



R. C. ALLEN

Woodward Iron Company. H. A. Woodward continues as chairman of the board.

COL. WARREN R. ROBERTS, Roberts & Schaefer Company, Chicago, Ill., was in Washington during the month, conferring with NRA officials in relation to the code of fair competition for the mining-construction industry.

WALTER DOUGLAS, former president of the Phelps Dodge Corporation, has accepted the presidency of the Southern Pacific of Mexico Railroad Co., and with Mrs. Douglas, will make his future home at Mexico City, Mexico.

MICHAEL CURLEY, general manager, New Cornelia Branch, Phelps Dodge Copper Company, is vice chairman of the district control committee of NRA formulating plans for enforcement in California, Arizona and New Mexico.

ROBERT E. TALLY, vice president, United Verde Copper Co., is again at Jerome, Ariz., after an extended stay in New York, where he helped develop the code of fair competition for copper.

GILBERT C. DAVIS, head of the coal properties of the Phelps Dodge Corporation, at Dawson, N. Mex., represented his company in Washington at the hearings on the bituminous coal code.

R. B. TEMPEST has been appointed acting general manager of the Nevada Consolidated Copper Company, Chino Mines, at Santa Rita, N. Mex., filling the vacancy caused by the death of John M. Sully.

C. K. LEITH has been appointed a member of President Roosevelt's Science Advisory Board, of the National Research Council.

L. R. CLOSE has been elected president of the Lehigh Valley Coal Corporation, succeeding Richard F. Grant, who has resigned.

C. S. B. WARD has been elected president of the reorganized American Wholesale Coal Association.

CARL SCHOLZ, Consulting Engineer, long identified with the coal industry, was a Washington visitor during the month.

F. J. MAPLE, Advertising Manager, John A. Roebling Sons Company, and Mrs. Maple, have been in Chicago attending the Century of Progress Exposition.

R. C. ALLEN, Oglebay Norton Co., of Cleveland, Ohio, was in Washington during September.

LUCIEN EATON, well known consulting mining engineer, is in Nicaragua.

J. H. HENSLEY, JR., assistant manager, Miami Copper Company, was in New York during September.

HORACE MOSES has been named general manager of the Gallup-American Coal Company.

H. A. BERG, vice president and general manager of Sloss-Sheffield Steel & Iron Company, has been elected president of the

E. J. NEWBAKER, vice president, The Berwind-White Coal Company, who has been in Washington during the discussions on the bituminous code, has returned to Windber, Pa.

DR. AND MRS. L. E. YOUNG have returned to their home in Pittsburgh, Pa., after an extended stay in Washington. Dr. Young, who is vice president of the Pittsburgh Coal Company, has represented his company on many matters in relation to the bituminous code.

W. J. LORING has been appointed as consulting engineer for the Arizona-Comstock Corporation, and will hereafter make his headquarters at Virginia City, Nev. Mr. Loring was for years identified with the Carson Hills Mining Company, of California.

C. F. KELLEY, president, Anaconda Copper Mining Company, recently made an extended trip through the west visiting the properties of his company.

L. S. CATES AND MRS. CATES have gone to the Pacific coast, where Mr. Cates who is president, Phelps Dodge Corporation, has inspected the properties of his company.

E. V. DAVELER, treasurer, Utah Copper Company, has returned to New York after an extended western trip, where he visited the Bingham Canyon mines of his company.

ROBERT S. LEWIS, professor of mining at the University of Utah, recently spent a month in the Sudbury mining district of Canada.

W. MONTAGUE FERRY, president, Silver King Coalition Mining Company of Utah, presided at the opening session of the Intermountain Economic Conference, held at Colorado Springs, Colo., in September.

J. F. CALLBREATH, secretary, The American Mining Congress, is in the west, visiting the various mining districts. He attended the Intermountain Economic Conference.

D. A. THOMAS, president, Montevallo Coal Mining Company, of Alabama, was chairman for the Alabama operators in their negotiation in relation to the bituminous code.

MILTON H. FIES, vice president, DeBardeleben Coal Corporation, was recently elected chairman of the Public Works Advisory Board for Alabama.

S. A. SCOTT has been elected president of the New River Company, and all its subsidiary companies.

CHAS. G. JOHNSON, of Bridgeport, Ohio, has been made general manager of mines, both for the Lorain Coal & Dock Company operating in the Pittsburgh No. 8 Field of Ohio, and the Lorado Coal Mining Company, operating in Logan County, W. Va.

W. G. MATHER has resigned from the presidency of the Cleveland Cliffs Iron Company and will become chairman of the company, a newly created position. He is succeeded by Edward B. Greene, chairman of the executive committee of the Cleveland Trust Company.

MR. GEORGE J. KADEL, president of the Elliott Service Co., today announced the election of Mr. Glenn L. Gardiner, assistant to the president of the Forstmann Woolen Manufacturing Co., of Passaic, N. J., to the board of directors of the Elliott Service Co.

J. S. TRITLE, vice president and general manager of the Westinghouse Electric and Manufacturing Company, has announced the appointment of C. H. Champlain as general works manager of the company.

# NEWS OF MANUFACTURERS

**A** UNIQUE 12-in. x 18-in. copiously illustrated 24-page book, No. 1366, has just been completed by Link-Belt Company, 300 West Pershing Road, Chicago, under the heading of "A Story of Link-Belt Achievement in the Coal Industry." It reproduces the company's messages to the bituminous coal producing industry over a period of the year, illustrating and briefly describing several recent installations, as well as showing the various types of coal cleaning equipment, screens, loading booms, car hauls and dumps, crushers, dust extractors, etc. A copy of this book may be had by addressing the company on business letterhead.

**R**ECENT MEDICAL experiments and experience have indicated the value of Methylene blue in conjunction with artificial respiration as an effective treatment in cases of cyanide poisoning.

The Journal of the American Medical Association reports the case of a man who was brought into the San Francisco Emergency Hospital in a comatose condition, after having taken 15 grains of potassium cyanide. Methylene blue was injected and within five minutes the patient was conscious. Recovery was complete within 15 minutes, with no injurious effects upon the patient.

Cyanide causes death by stopping the exchange of oxygen in the body cells. This action is largely overcome by treatment with Methylene blue.

To facilitate the use of this treatment, E. D. Bullard Co., San Francisco, manufacturers of safety equipment, have developed a Methylene blue emergency package containing everything necessary for instant treatment by a physician. As immediate treatment is vital in the case of cyanide poisoning, it is recommended that the Bullard Methylene blue emergency package be available in all clinics, dispensaries and first aid hospitals, as well as other locations adjacent to places in which cyanide may be used.

Literature is available from the distributor.

**T**HE ENTIRE PATENT, manufacturing and selling rights for all devices heretofore manufactured and sold by the Traylor Vibrator Company, of Denver, Colo., have been acquired by the Jeffrey Manufacturing Company.

The Denver plant of the Traylor Company has ceased to manufacture equipment. Hereafter the business will be conducted as the Jeffrey-Traylor Division of the Jeffrey Manufacturing Company in Columbus, Ohio, where both mechanical and electrical parts of Jeffrey-Traylor units will be manufactured. Future inquiries and orders will be handled from Columbus.

Mr. James A. Flint, formerly vice president of the Traylor Vibrator Company, will be in general charge of the new division. The future development and application of the Traylor units of screens, conveyors, dryers, coolers and feeders, will receive the full attention of Traylor engineers combined with the extensive engineering, development, research and manufacturing facilities of the Jeffrey Manufacturing Company.

**A**T HOOVER DAM nine Westinghouse equipped Marion electric shovels are digging the four 56-ft. diameter diversion tunnels, whose combined length of 15,909 ft. will sidetrack the Colorado River until the dam is partially in place. Electrical and mechanical maintenance on the shovels, including labor and supplies, is approximately 0.6 cents per cu. yd., and power consumption is estimated from test readings at 0.3 kw.-hr. per cu. yd. About 121 cu. yd. (solid measure) per digging hour has been averaged, a relatively high figure since loaded trucks had to get out of the way before empty ones could back in. Individual records reached 200 cu. yds. per hour and as much as 16,000 cu. yds., solid measurement, were removed from the tunnel in a day.

**T**HE SULLIVAN Machinery Company, 400 North Michigan Avenue, Chicago, have placed on the market a new sized portable air compressor, providing 505 cu. ft. displacement against the customary working pressure of 100 lbs. per square inch. This unit has been designed to meet the growing demand for a really portable compressor of large capacity and superior efficiency.

Sullivan angle compressors, in capacities from 350 to 500 cu. ft. displacement and for standard operating pressures (up to 125 lbs.) are described in a separate bulletin, No. 88-I, just completed.

**C.** K. KING, president, Ohio Brass Company, announces receipt of word that his company has been awarded the contract for 253,000 suspension insulators by the Bureau of Power and Light, City of Los Angeles for the 270-mile, 275-kv. power transmission line between Boulder Dam and the city. The insulator contract is one of the largest ever awarded, amounts to approximately \$435,000, and calls for deliveries from January 1, 1934, to January 1, 1935 on which production will be started at once in both the Mansfield and Barberton plants. The former will supply 325 tons of malleable iron caps which will be assembled with the porcelain parts made in the Barberton plant from which will be shipped a total of 75 carloads of completed insulators.

**C**HICAGO PNEUMATIC Tool Company announces the opening September 1st of a new branch office at 1028 Sixth Avenue South, Seattle, Wash., Mr. A. M. Andresen, manager.

**G**ENERAL ELECTRIC states that its acceptance of N. R. A. has increased its pay roll. The total amount of such increases is at the rate of \$8,000,000 per year, affecting more than 42,000 employees, including almost 2,000 additional employees immediately put to work.

**T**HE ANACONDA COPPER MINING COMPANY, Anaconda, Montana, has found that reconditioning mill equipment by means of arc welding will reduce the warehouse stock necessary to insure continuous operation of mill machinery and will, in addition, save considerable money by minimizing the necessity for purchasing new parts. Recently, a badly worn ball mill trunnion was brought into the company's welding shop for reconditioning. This particular trunnion was 20 inches in diameter, 30 inches long, and weighed approximately one and one-half tons. To replace it with a new trunnion would cost in the neighborhood of \$300.

The Anaconda Copper Mining Company had rebuilt an old boring mill for use in reconditioning work after the worn trunnion had been built up to a diameter of 21 inches by the deposition of 300 pounds of electrode, it was placed on the boring mill and machined down to a finished diameter of 20 inches. A General Electric automatic arc welding head and General Electric type F electrodes were used on the job. The total cost of reconditioning the trunnion, including power, labor, electrodes, and overhead, was approximately \$75. Since its repair, the trunnion has given excellent service.

**F.** A. MERRICK, president of the Westinghouse Electric & Manufacturing Company, has issued the following statement regarding the company's participation in the National Recovery Act: "All works and offices of the Westinghouse Electric and Manufacturing Company and subsidiaries will, dating from August 15, operate under the provisions of the National Recovery Act which at that date becomes effective for the Electrical Manufacturing Industry as set out in the Code of the National Electrical Manufacturers Association approved by President Roosevelt."

**T**HE LATEST advances in eye protection for oxy-acetylene welding and cutting have been embodied in the new Oxweld No. 15 welding spectacles and a new lens, Type AA, just announced by The Linde Air Products Company, 30 East 42nd Street, New York, N. Y. The new type AA lens, flat-ground and polished, is made in light, medium and dark green shades. It has high protective qualities, and its transmission percentages meet the most rigid specifications for eye protection. The use of the Type AA lens is recommended where safety codes prevent the use of other lenses which are not flat-ground and polished, although equally effective otherwise. This new lens conforms to all code requirements, including those of the Federal Government.



## A New One-Man Diamond Drill

SHORT HOLE diamond core drilling is becoming a recognized standard practice underground in metal mines; and in many cases, years have been added to the life of the mine by the finding of new and unsuspected ore bodies within a few feet of present workings.

In limestone formations, many operators are now drilling the walls of old stopes to be sure that what seems to be the true wall is not a "horse" of waste separating the old stope from a new and important ore body.

In copper mines, where the ore body may consist of massive sulphides with pyrites predominating, short hole core drilling has proven of great value in finding lenses of unsuspected ore in the sulphide body which would otherwise have been overlooked; or found only by expensive cross-cutting.

Where faulting occurs, even if the ore body is not encountered by the drills, a few short holes may give geological information which will lead to the discovery of the lost vein.

In gold mines, where a wide quartz vein has irregular ore shoots, short hole core drilling has been the means of large savings by avoiding the driving of useless crosscuts.

The ordinary underground diamond core drill, usually has a capacity of 700 ft. or more. While satisfactory as to results secured, this type has been expensive to operate on account of the large amount of compressed air consumed and the cost of moving and setting up.

Sullivan diamond drill engineers announce a new one-man machine, known as No. 6, which has just been placed in the field. This was designed after an extended study of field requirements and conditions. It meets the need for a light, compact machine of relatively small capacity for shallow underground exploration, in advance of drifting, stoping, etc.

The No. 6 is designed with heavy double-grip clamp, so that it may be set up quickly on a mining column or cross bar. The machine uses standard diamond drill fittings, size "E" (15/16-in. core) or "EX" (7/8 in. core) and will accommodate fittings through the swivel head, 1 1/2 in. O.D. It has a capacity of 50 to 150 ft. in depth, although under favorable conditions, greater depth may be reached, as the machine has plenty of power. It will drill at any angle from vertical to horizontal. A hinge and clamp are furnished so that when pulling or lowering rods out of or into the hole, the entire drilling mechanism can be swung back out of the way. Provision is made, however, for pulling rods direct through the spindle on shallow holes.

The No. 6 drill weighs only 231 pounds complete. The swivel head of the guide weighs only 127 pounds and the compressed air "turbinair" motor, which furnishes the operating power, weighs only 80 pounds. The motor may be detached from the swivel head when necessary, to facilitate handling.

The swivel head is equipped with three sets of feed gears providing from 200 to 600 revolutions of the spindle for each foot drilled. Change gears are furnished for either slower or faster drilling if these are needed. The standard rotating speed is 350 r.p.m., although gears to 600 r.p.m. may be provided.

The feed gears and quill gears are unusually long, providing freedom from vibration and assuring accurate alignment at all times. In addition to this, the "Turbinair" motor is balanced to a nicety, so that engine vibration is eliminated. This prevents whipping action on the rods, reduces wear and breakage and prevents crooked drilling.

This machine, therefore, provides equipment for the short, exploratory hole which becomes so essential in modern mining development and at the same time permits the maximum of information to be obtained from this advance drilling by means of the drill cores which it secures.

**INGERSOLL-RAND COMPANY**, 11 Broadway, New York, has issued a new catalogue, entitled "Portable Compressors, Tools and Equipment," which is designed to assist all users of compressed air. It describes and illustrates a wide range of machines and tools that have many applications, and lists the types of work for which each unit is particularly fitted.

The catalogue is designated as Form 1604E and free copies of it are obtainable at any Ingersoll-Rand office.

**THE ROLLER-SMITH COMPANY**, 233 Broadway, New York, N. Y., announces a new test set consisting of the Type CSO Split Core Transformer with either a Type PA or Type Steel-Six Ammeter.

With this new test set it is possible to obtain alternating current ampere readings as low as one-half ampere and as high as 200 amperes. While the ammeter was designed especially for use with the Type CSO transformer, it may be used separately as a self-contained, double range instrument. The ammeter has two ranges, the lower range being 2.8 amperes and the high range 15 amperes, when used *without* the transformer. When used *with* the transformer, two additional ranges are provided, namely, 40 and 200 amperes.

## LEGISLATION

(Continued from page 15)

is heard the steady rumble of fear, based on lack of either confidence or understanding. Unquestionably, Washington will be the Hub of the Universe for sometime to come. Unquestionably, everything humanly and politically possible will be done to make NRA successful and the millions of men now out of employment, employed. Unquestionably, the January session of Congress will be a stormy one. But equally certain is the fact that the people have a cause and a champion and that sentiment is steadily gathering momentum behind each.

Meantime, tremendous effort is being made to enforce the Codes of Fair Competition. Chiselers and profiteers are doomed. Compliance boards are being set up in every hamlet and village in the nation to take care of those who display the Blue Eagle with a bold front and yet violate the wage, hour and other requirements. This machinery is being completed speedily.

The National Labor Board has been created by the President as an agency for arbitration and conciliation of industrial disputes. All employers and employees are asked to submit their disputes to this board, on which both are equally represented. The life of the board is for the duration of the emergency and apparently for so long as it may assist in labor disputes.

In all of the commotion attendant upon the new order, the ordinary functions of Government are seemingly lost. Nevertheless, our Bureau of Mines goes on peacefully compiling statistics and performing its useful service to the industry.

**A NEW SINGLE-STAGE**, belt-driven compressor designed for heavy-duty service is announced by Ingersoll-Rand Company, 11 Broadway, New York. It is designated the Class ES. It has one horizontal, double-acting cylinder and operates at moderate speeds. It is available in sizes from 10 to 125 horsepower, and for discharge pressures from 5 to 150 pounds.

The machine is suitable wherever full-load, continuous service is required and wherever power cost is an important consideration. It will give economical standby service for large compressors whose full capacity is not always needed. It is well adapted for use in isolated plants where there is little supervision, for all applications where oil in the discharge line is objectionable, or for installations where a future change in pressure conditions may call for a change in cylinder size.

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**E**NGINEERS of the U. S. Bureau of Mines have recently inspected 150 small lode gold mines in California, southern Oregon, Arizona, New Mexico, Colorado, Utah, Montana and Idaho, for the purpose of gathering information on methods and costs of equipping and developing properties handling less than 100 tons per day. Data obtained will be compiled and published.

Conclusions already reached are summarized below:

1. Few, if any, of the properties visited can be considered as potential large producers of gold; the ores are mostly low grade and occur in narrow veins. A number possess possibilities for profitable operation on a small scale if economically operated by experienced men. In some instances competent management is hampered by lack of capital. Most of the properties have little ore blocked out.

2. Many of the operators are hopeful of an open market for gold. If they are allowed to sell their gold in the world market, thereby obtaining a premium of about 30 percent above the price paid by the U. S. Mint, the possibility of profitable operation will obviously be enhanced.

3. Many of the operators of small properties have had little experience in mining and are in need of competent technical advice but in most instances they can not afford to employ consultants. In some cases, the erection of milling plants absorbed all available capital before ore had been developed. In other instances development expenditures were ill-advised and exploratory openings were poorly planned.

4. Considerable ground which would warrant exploration is owned in fee or is held by location under the Federal mining and homestead laws by parties who have neither the intention nor the capital to investigate the mineral possibilities. A change in the law, which would require the holders of such property to either develop it or release it for legitimate exploration, would be beneficial.

5. Much information has been gathered which, when carefully analyzed and correlated, will be of value, especially to the inexperienced small operator. It is planned to issue information circulars covering the best methods of development for different conditions, milling methods for different types of ores, unit costs of development in different districts and actual installation costs of small milling plants. Separate circulars will be issued on a few individual operations where good practices in development, mining and milling are being followed.

**O**N AUGUST 29th last, J. T. Ryan, chairman; T. A. Willson, vice chairman; A. C. Carruthers, acting secretary of the Industrial Safety Equipment Manufacturers' Association of the United States of America, presented the proposed code of fair competition, prepared by this association, to the National Recovery Administration, Washington.

**P**RODUCTION of both beehive and byproduct coke totaled only 21,912,511 short tons in 1932, the lowest output since 1901, a decrease of 34.6 percent from 1931 and 63.4 percent from 1929, the peak year of coke production in the United States. Most of the decline in 1932, as in the two preceding years, was accounted for by reduced activity in the metallurgical industries. In years of high industrial activity, pig-iron furnaces consume approximately three-fourths of the total supply of coke; the output of pig iron in 1932 was 79.5 percent less than in 1929, whereas coke production decreased 63.4 percent in the same period. Byproduct ovens contributed 97 percent of the total production in 1932, virtually the same proportion as in 1931. The output of these plants fell to 21,258,948 tons in 1932, a decrease of 11,096,601 tons (34.3 percent) from 1931. The activity of beehive ovens declined even more in proportion than that of byproduct plants. Production amounted to 653,563 tons in 1932, a decrease of 42.1 percent from that in 1931.

Of particular significance is the growing demand for coke for domestic use. While other uses of coke have shown marked declines during the depression, sales of domestic coke have increased each year to 9,457,259 tons in 1932, an increase of 11.3 percent over 1931. Stocks remained at relatively high levels throughout the year, particularly in relation to consumption. Byproduct coke stocks on hand at producers' plants amounted to 4,379,000 tons on January 1 and 3,590,000 tons on December 31; however, stocks represented 60.8 days' supply at the beginning of the year and 62.3 days' supply at the end of the year based on the rate of consumption prevailing during the month preceding each date.

Byproducts obtained from coke-oven operations in 1932 were as follows: Tar, 303,408,299 gallons; ammonium sulphate or equivalent, 708,207,288 pounds; gas, 347,847,192 thousand cubic feet; light oil and derivatives, 58,918,075 gallons; naphthalene, crude and refined, 4,618,792 pounds; creosote oil distillates, 5,733,819 gallons; creosote oil in coal-tar solution, 1,652,005 gallons.

**O**NLY 0.4 long ton of tin, valued at approximately \$220, was produced by mines in the United States in 1932—and all of this came from South Dakota. This was a decrease of 3.3 tons from the 1931 production. However, recovery of secondary tin—that is, production of tin from sources other than ore—provides more than one-fourth of the United States supply of tin. The production from secondary sources in 1932 was 13,170 long tons, against 17,679 tons in 1931. Imports of tin in 1932 amounted to 34,819 long tons, valued at more than \$16,000,000, against 66,064 long tons, valued at nearly \$37,000,000 in 1931.

## BOOK REVIEW

By C. E. JULIEN

**THE PORPHYRY COPPERS**, by A. B. Parsons. *American Institute of Mining and Metallurgical Engineers, through the Rocky Mountain Fund, New York; 1933, 580 pages, illustrated. Price \$1.50 to members and \$5 to others.*

**T**O AMERICA the world is chiefly indebted for the remarkable series of technologic advances in mining and metallurgy that made possible the utilization of exceedingly low-grade ores. At Utah Copper, where mass mining of copper was first demonstrated, and at several other operations that soon adopted its methods, the ore was porphyry containing specks of copper sulphides. These mines were, therefore, called the porphyry coppers, and eventually any very large, low-grade copper mine that adopted similar methods was referred to as a porphyry copper.

The fame of these mines is due, however, to their practice of mass mining of ores so low that they were unthought of as possible sources of metal before the beginning of the present century, and to the fact that their success has vastly increased the amount of copper and other metals that it is possible to supply in response to enlarged demands of industrial civilization. Their enormous tonnages and gigantic equipment, their low costs and substantial profits, and, above all, their steady lowering of the grade of ore that may be treated, have astonished and interested those alike who view them merely as a fascinating spectacle or who are more deeply impressed by their economic and social significance.

The histories of Utah Copper and of 11 other important mines of similar character in North and South America are here recorded by an author well-fitted for his task by the broad understanding of mineral industries that caused his selection as the executive secretary of the American Institute of Mining and Metallurgical Engineers. Much painstaking research as well has been required to make available the fascinating record of these 12 outstanding achievements of the American engineering professions, for in these mining operations the coordinated talents of engineers of many kinds have been utilized.

The chapters that tell how these men translated their daring dreams into reality resemble the stories of an epic, in which the dramatic struggle is one with nature. On remote deserts, on mountain tops, and in the craters of extinct volcanoes is staged the bold enterprise of Jackling, Braden, Requa, Channing, the Douglasses, Greenway, Ricketts, Aldridge, and other engineers of the porphyry group, whose lives suggest those of the seafaring heroes of the Norse Sagas, transposed into the modern industrial environment.

There follow seven chapters that review these operations as a whole in their geologic as well as their technologic aspects, including prospecting and estimating ore, power shovel mining, underground mining, concentration, smelting and leaching. Their economic and social significance is evaluated in a concluding chapter and the book is provided a foreword by John Hays Hammond.

The purpose of the book as a historical and technologic record is fully attained, but it may be regretted by some that it does not include at least some sketchy indication of the long-time trends of technologic developments, of which the porphyry coppers are the culmination. It should be borne in mind that they did not result from the sudden invention of a method, but resemble more nearly the capstone of a technologic structure built through centuries by Saxon and Cornish miners and advanced more rapidly in the last half of the Nineteenth Century by a host of American miners and engineers. Without that heritage from human endeavor there could have been no mass mining and no porphyry coppers.

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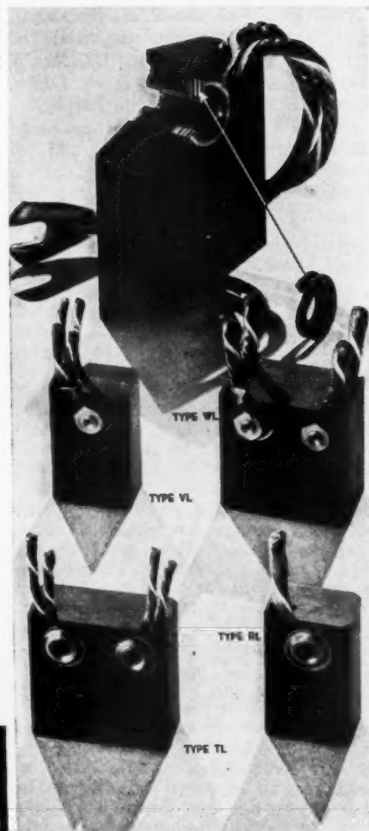
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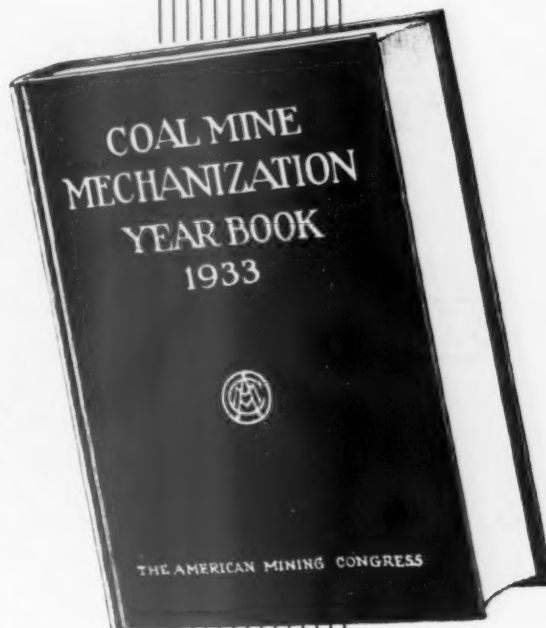
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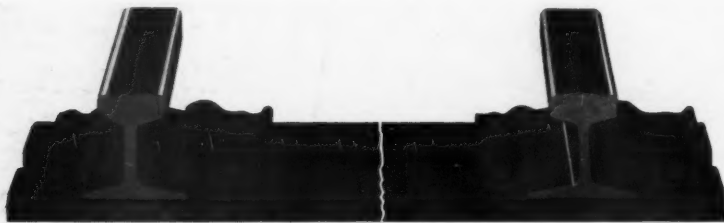
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